

FACTORS AFFECTING THE FEASIBILITY OF A
WARSAW PACT INVASION OF WESTERN EUROPE

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ABSTRACT

Factors Affecting the Feasibility of a Warsaw Pact Invasion of Western Europe (April 2008)

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The end of the Cold War and the opening of selected archives in both Eastern and Western Europe provide scholars the opportunity to study this period with greater accuracy and detail than was previously possible. This study sought to determine the feasibility of a Warsaw Pact invasion of Western Europe in 1987 through the examination of the factors that would have affected such an operation. The factors are the reliability of military allies, the potential for the use of nuclear weapons, Warsaw Pact strategy, North Atlantic Treaty Organization (NATO) strategy, operations on Europe's flanks, naval operations, aerial operations, reinforcement and mobilization, readiness, terrain and weather, and ground forces. These factors were examined through

the use of secondary literature on military forces in the Cold War as well as primary sources such as government documents and publications. After each of these factors have been analyzed then conclusions will be drawn about the probable course of such a conflict in Central Europe. The argument will be made that nuclear weapons would not have been used in the first stages of a war by NATO or the Warsaw Pact. NATO's ability will be shown to be sufficient to successfully defend most of West Germany. As this was not the conclusion of many defense analysts during the Cold War this research highlights the importance of withholding judgments about the capabilities of military forces until all relevant data is available.

For my fiancé, Ashley

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TABLE OF CONTENTS

	Page
ABSTRACT.....	ii
DEDICATION.....	iv
ACKNOWLEDGEMENTS.....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES.....	ix
LIST OF TABLES.....	x
GLOSSARY.....	xi
CHAPTER	
1 INTRODUCTION: WHY THE LATE 1980s?.....	1
NATO's Only Chance	3
2 RELIABILITY OF MILITARY ALLIES.....	12
NATO and Reliability	12
The Warsaw Pact and Reliability	15
3 THE NON-NUCLEAR ARGUMENT.....	20
4 WARSAW PACT STRATEGY.....	28
5 NATO STRATEGY.....	43

6	EUROPE'S FLANKS.....	54
	Norway	55
	The Mediterranean	57
	Conclusion	59
7	NAVAL FORCES AND OPERATIONS.....	60
	Maritime Roles	60
	Soviet Maritime Forces	67
	NATO Maritime Forces	78
	Conclusion	91
8	THE WAR IN THE AIR.....	95
	Organization	95
	Doctrine and Tactics	98
	Weather	104
	Numerical Strength	105
	Quality	109
	Conclusion	111
9	MOBILIZATION AND REINFORCEMENT.....	113
	Warning Time	115
	European NATO	119
	Overseas NATO	133
	Warsaw Pact	149
10	READINESS: TRAINING AND LOGISTICS.....	166
	Warsaw Pact Logistics	167
	NATO Logistics	169
	Warsaw Pact Training	172
	NATO Training	175
11	TERRAIN AND WEATHER.....	177
	Weather	177

Terrain	178
NORTHAG	180
CENTAG	186
Conclusion	191
12 GROUND FORCES.....	193
Location and Size	193
Force to Space Ratios	198
Equipment	201
Conclusion	203
13 CONCLUSION.....	204
REFERENCES CITED.....	210
REFERENCES CONSULTED.....	219
APPENDIX I WARSAW PACT TREATY.....	229
APPENDIX II NATO TREATY.....	234
APPENDIX III CHURCHILL ON MOBILIZATION.....	239
CURRICULUM VITA.....	241

LIST OF FIGURES

FIGURE	Page
1 Soviet Invasion Plan.....	35
2 NATO Corps Sectors.....	47
3 Soviet Air Defenses.....	109
4 West German Forces.....	121
5 Belgian Units in Belgium.....	124
6 Dutch Forces in Netherlands.....	126
7 French Forces in France.....	129
8 Soviet Forces in East Germany and Poland.....	154
9 Soviet Forces in Czechoslovakia.....	155
10 Soviet Forces in Hungary.....	155
11 Soviet Military Districts.....	158
12 Western USSR Military Districts.....	159
13 NATO Corps Sectors.....	196

LIST OF TABLES

TABLE	Page
1 Soviet and Warsaw Pact Naval Deployments.....	69
2 NATO Naval Deployments I.....	80
3 NATO Naval Deployments II.....	81
4 Comparative Naval Strength.....	94
5 Summer Weather in Germany.....	104
6 NATO Aerial Strength.....	106
7 Warsaw Pact Aerial Strength.....	107
8 Aircraft for US Reinforcement.....	141
9 NATO Ground Forces After Mobilization.....	148
10 Non-Soviet Pact Forces.....	151
11 Soviet Forces in Eastern Europe.....	156
12 Soviet Forces in the USSR.....	160
13 Warsaw Pact Invasion Forces.....	194
14 NATO Defensive Forces.....	195
15 NATO Corps Force to Space Ratios.....	199

GLOSSARY

Army: Military unit composed of 2 or more corps, usually has over 100,000 soldiers

Army Group: Military unit composed of 2 or more armies

ASW: Antisubmarine Warfare, systems, weapons, or ships primarily designed or trained to detect, track, and engage enemy submarines

AWACS: Airborne Early Warning and Control System, US aircraft equipped with long range airborne radar designed to coordinate activities of other allied aircraft

Battalion: Military unit with 600-1000 soldiers, composed of 3-4 companies

Battle Force: US Navy formation composed of 2 or more carrier battle groups

BB: Battleship, a large heavily armored warship of 35-50,000 tons armed with long range 13-16 inch guns and other short and medium range guns, designed to engage enemy ships and provide fire support for ground operations

BOAR: British Army of the Rhine, British forces stationed in West Germany

Brigade: Military unit with 4-6,000 soldiers, composed of 3-5 battalions

C-5: Long range strategic US air transport

C-141: Long range strategic US air transport

C-130: Medium range strategic US air transport

CAST: Canadian Air Sea Transportable Brigade, brigade of Canadian forces tasked to Norway in wartime

CG: Guided Missile Cruiser, a medium sized warship of 7-12,000 tons powered by diesel engines and armed with guided missiles, guns, and torpedoes designed to engage enemy ships, submarines, aircraft and missiles, occasionally carried 1-2 ASW helicopters

CGN: Guided Missile Cruiser, similar to a CG except powered by nuclear engines

CHG: Guided Missile Helicopter Cruiser, similar to a CG carrying roughly 6-15 helicopters and fewer weapons

Common User Fleet: Commercial transports owned by US maritime companies who pledged their ships to the US military for sealift in wartime

Corps: Military unit composed of 2 or more divisions

Counter-force: A strategic nuclear targeting strategy where nuclear weapons are targeted on enemy nuclear weapons and their delivery systems

Counter-value: A strategic nuclear targeting strategy where nuclear weapons are targeted on enemy cities in order to maximize enemy civilian deaths

CV: Aircraft Carrier, a large diesel powered warship, weighing 30-60,000 tons and carrying 20-75 aircraft and several helicopters, armed with short range air defense weapons, designed for use in concert with escorting warships

CVBG: Carrier Battle Group, composed of one aircraft carrier and 5-10 escorting warships

CVH: Helicopter Carrier, A large diesel powered warship with a complement of 6-20 helicopters designed primarily for ASW and amphibious operations as a part of a larger group of warships

CVN: Nuclear Aircraft Carrier, a very large nuclear powered warship, weighing 90-100,000 tons carrying 70-90 aircraft and several helicopters, armed with short range air defense weapons, designed for use in concert with escorting warships

DD: Destroyer, a diesel powered warship smaller than a cruiser, armed with some combination of missile, guns, and torpedoes, designed as an escort to engage enemy ships, submarines, and aircraft, sometimes carrying 1-2 helicopters

DDG: Guided Missile Destroyer, similar to a destroyer but primarily armed with guided missiles and torpedoes

Division: Basic military unit with 10-18,000 soldiers, composed of 3-4 brigades or regiments

FA: Fast Attack Craft, a very small warship of 100-400 tons, armed with short range anti-ship missiles, designed for short range operations in coastal waters

FF: Frigate, a small warship designed for patrol and coastal work, weighing less than a destroyer, primarily designed and armed to engage enemy submarines and ships, armed with short range anti-ship and anti-air missiles, sometimes carrying 1-2 helicopters

FFG: Guided Missile Frigate, a warship similar to a frigate but armed with medium range guided missiles

KC-10: Long range US air to air refueling tanker

LOC: Lines of Communication, routes connecting military forces to their sources of supplies and reinforcements

LRMP: Long Range Maritime Patrol Aircraft, a naval aircraft, usually propeller driven, designed for ASW operations carrying sonar buoys, torpedoes, and anti-ship missiles

MAB: Marine Amphibious Brigade, US Marine Brigade tasked to the reinforcement of Norway in wartime

MCM: Mine Countermeasures Ship, a small warship with minimal armaments, weighing less than 2000 tons, designed to deploy, detect, and destroy mines

MP: Maritime Patrol Aircraft, similar to a Long Range Maritime Patrol Aircraft, but usually with 2 instead of 4 engines and designed for operations at short and medium ranges

NAEFW: NATO Airborne Early Warning Force, NATO's multi-national complement of AWACS aircraft

NADGE: NATO Air Defense Ground Environment, NATO's integrated system of air defenses, search radars, interceptors, command and control centers, and communication relays

Passive IR: Infrared detection systems that detect infrared radiation without actively scanning

Ready Reserve Fleet: Transports owned by the US government to be used by the US military for strategic sealift and reinforcement in wartime

SOSUS: Sound Surveillance System, a worldwide network of passive sensors emplaced by the US on the seabed on the continental shelf designed to detect submarines and ships

SS: A diesel powered submarine armed with torpedoes, designed for use in coastal and the mid-range ocean in patrol and attack functions

SSB: Ballistic Missile Submarine, a large diesel powered submarine armed with long range nuclear missiles and torpedoes, primarily designed for use in a nuclear war setting

SSBN: Ballistic Missile Submarine, a nuclear powered submarine similar to an SSB in design and armaments

SSG: Cruise Missile Submarine, a diesel powered submarine, armed with cruise missiles and torpedoes designed to attack enemy ships and submarines first with standoff cruise missiles

SSGN: Cruise Missile Submarine, a nuclear powered submarine similar to an SSG in design and armaments

SSN: Nuclear Attack Submarine, A nuclear powered attack, or 'hunter-killer', submarine armed with torpedoes and sometimes short range anti-ship missiles, designed to attack enemy ships and submarines in the deep ocean

UKMF: United Kingdom Mobile Force, a reinforced mechanized infantry brigade tasked to reinforce Denmark in wartime

WHNS: Wartime Host Nation Support agreement, an agreement between NATO members that governs the use of national transport systems to move reinforcing NATO formations into West Germany

CHAPTER 1¹

INTRODUCTION: WHY THE LATE 1980s?

The ability of any study to make meaningful conclusions about the feasibility of a Soviet invasion of West Europe is directly tied to the probability that nuclear weapons would be employed during the hypothetical conflict. The employment of tactical nuclear weapons makes the analysis of the conflict infinitely more difficult because of all the attendant factors that come into play. It is not necessary to know the exact target of every tactical air strike and every artillery barrage that would take place in order to assess the probable outcome of a future conflict. However it is necessary to know, for example, whether NATO concentrates its tactical nuclear assault on the Soviet forces facing CENTAG or NORTHAG. If publications on tactical nuclear doctrine were clearer then it might be possible to make judgments about their employment. The problem is that nations are extremely reticent to proclaim their nuclear plans of any sort. They are much

¹ This thesis follows the style and format of *The Journal of Military History*.

more willing to describe how they plan to fight a conventional war and so that information is much more readily available.

At the same time that the use of tactical nuclear weapons on its own makes an in depth study of potential conflict in Europe difficult, the possibility of strategic nuclear weapons use makes such a study almost meaningless. One's assumptions about the relationship between tactical and nuclear weapons play into the potential for strategic nuclear employment in a conventional conflict scenario. These assumptions are tied to doctrine and will be examined in depth later. For now it is sufficient to say that NATO and the Soviet Union had differing opinions on this subject. NATO, particularly the United States, believed that a limited nuclear war could be fought in Europe with resorting to strategic nuclear weapons. NATO's doctrine called for the use of the US strategic nuclear arsenal if their conventional forces were defeated. NATO's repeated attempts to connect the deterrence value of troops on the Inner German Border and the US strategic nuclear arsenal demonstrate that they feared the possibility of such a limited nuclear war. The Soviets held that such a distinction was artificial and that tactical nuclear employment would quickly lead to the terrifying prospect of strategic nuclear exchange. It is difficult to see how the tactical use of nuclear weapons on the Central

Front in Europe would not have gradually moved into strategic nuclear exchange. France and Britain would not view explosions of tactical nuclear weapons over their cities as a “limited” nuclear war and would have every reason to respond with their strategic systems. At the same time many of the targets that would have been most beneficial for NATO to strike with tactical nuclear weapons lay inside the borders of the Soviet Union and would not have been regarded as “limited” in nature. Therefore the potential for escalation after the tactical nuclear threshold was crossed was high. All this is to say that in order to successfully study the possible or probable outcome of a Soviet invasion of Western Europe one must focus on the period in which there is the least likelihood for nuclear weapons to be employed. While it is impossible to fully rule out the potential for their use, the late 1980s present the best opportunity for a meaningful study of this scenario.

NATO’s Only Chance

The only time during the Cold War in which NATO could be described as potentially capable of resisting a Soviet Union was the late 1980s. Realistically NATO was not in the same league as the Warsaw Pact until that time period. An examination of the balance of forces in Europe throughout the Cold War will substantiate this claim.

Following the end of the Second World War the victorious Allies maintained various amounts of conventional forces in Germany for occupation duties. The British, American, and French forces were reduced to garrison size rather quickly while the Soviets maintained a powerful striking force of veteran divisions in East Germany and eastern Poland. The situation was such that by 1948 “12 scattered and under strength Western divisions were assumed to be facing a Soviet force of 25 divisions backed by another 115-150 divisions in the Soviet Union, all at full battle strength”². When NATO was founded in 1949 the conventional forces available to halt a Soviet attack were miniscule. The Allied occupation troops would have been no match for the battle hardened divisions the Soviets maintained in East Germany, Poland, and Czechoslovakia.³ The Western Allies were understandably concerned about their ability to defend not only their occupation zones in Germany but also the rest of continental Europe from a possible Soviet attack. The response to this conventional imbalance was the development of the doctrine of Massive Retaliation by the Truman Administration. This called for a minimum deployment of US and NATO forces to Central Europe with

² William P. Mako, *US Ground Forces and the Defense of Europe* (Washington, DC: The Brookings Institution, 1983), 7.

³ *Ibid.* 7.

the understanding that any conventional attack would be met with a strategic nuclear assault on the Soviet Union itself. Throughout the 1950s and into the 1960s NATO forces along the IGB (Inner German Border) would have served as little more than a tripwire for a US strategic nuclear response.⁴ According to NATO documents “the most important factor in a major war” would be “superiority in atomic weapons.”⁵ Over time the European members of NATO began to question the realism of relying on an American President to risk nuclear attack on cities within the continental United States for a Soviet incursion into West Germany.

Soviet planning in the 1950s and 1960s was based on the assumption that nuclear weapons would be employed immediately in any conflict in Europe. Soviet strategists understood Massive Retaliation and anticipated that nuclear weapons would be introduced early.⁶ Conventional forces were expanded in order to take advantage of any situation in Europe favorable to Communists interests.⁷ There was little reason to begin

⁴ Dr. Gregory W Pedlow, "NATO Strategy Documents 1949-1969," (NATO Historical Office, Supreme Headquarters Allied Powers Europe, 1997), XIV-XVI.

⁵ Ibid., XVIII.

⁶ Vojtech Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West* (London: Routledge, 2006), 16-18.

⁷ Ibid., 18.

a conflict with solely conventional forces only to have the US gain all the advantages of nuclear first use. Therefore the Soviets planned to begin their operations with nuclear strikes⁸ followed by a full scale invasion of West Germany and France with conventional forces taking advantage of the disruptions and holes created in NATO defenses.⁹

Eventually the United States transitioned its deterrence posture to that of Flexible Response under President Kennedy and Defense Secretary Robert McNamara. With the adoption of MC 14/3, otherwise known as the “Flexible Response” doctrine, by the NATO Military Committee in 1968 NATO was committed to “credible deterrence, effected by confronting any possible, threatened or actual aggression, ranging from covert operations to all-out nuclear war, with adequate NATO forces”¹⁰ Under Flexible Response NATO doctrine called for the employment of tactical nuclear weapons when conventional defense is shown to no longer be meaningful due to Soviet action.¹¹

Secretary McNamara called for increases in NATO conventional forces “in order to

⁸ Ibid., 46-47.

⁹ Ibid., 25.

¹⁰ Pedlow, "NATO Strategy Documents 1949-1969," 371.

¹¹ Barry R. Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks* (London: Cornell University Press, 1991), 1.

make clear to the Soviets that they could not successfully and quickly attack at the conventional level”¹² . The European members of NATO were not willing to risk the destruction of their native soil and cities through the exchange of tactical nuclear weapons between NATO and the Warsaw Pact. In order to correct this situation they began to develop a more robust conventional presence in Germany, such as the reinforcement of the British Army of the Rhine (BOAR) and the *Bundeswehr*, the West German Army. This European and American expansion of conventional forces made the employment of Allied tactical nuclear weapons in the event of a Soviet invasion less likely, but the change was not incredibly significant. Flexible Response will be examined in greater detail later but for the moment it will be sufficient to state that the doctrine remained NATO’s official defensive policy through the end of the Cold War.

The 1970s were a troubled time for NATO as the United States became more and more involved in the Vietnam War and conventional forces tasked to NATO received less support and equipment as a consequence.¹³ NATO’s conventional capability

¹² James R Golden, Asa A Clark, and Bruce E Arlinghaus, eds., *Conventional Deterrence* (Lexington, Massachusetts: Lexington Books, 1984), 13.

¹³ US Congress. Senate Committee on Armed Services, *Alliance and Defense Capabilities in Europe*, 100th Cong., 1st sess., October 20 1987, 235-36.

declined relative to Soviet capabilities.¹⁴ The US involvement in Vietnam severely curtailed the maintenance and modernization of the US forces in Europe, V and VII Corps.¹⁵ Weapons, training, and tactics were focused on counter-insurgency warfare in Southeast Asia and not on heavily mechanized operations on the plains of Central Europe. At the same time European governments were not as willing to spend the money and political capital necessary to maintain their conventional deterrence.¹⁶ Great reliance was played on the early deployment of tactical nuclear weapons to stem any Soviet advance. This focus made the use of Allied nuclear weapons more likely throughout the 1970s.¹⁷ This dependence was also present into the early 1980s¹⁸.

In the early 1980s NATO began to realize that its current conventional defense posture practically invited a Soviet invasion due to the deplorable state of Alliance

¹⁴ David D Finley, "Conventional Arms in Soviet Foreign Policy," *World Politics* 33, no. 1 (1980): 17.

¹⁵ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 296, John Keegan, ed., *World Armies*, 2nd ed. (Detroit, Michigan: Gale Research Company, 1983), 621.

¹⁶ Finley, "Conventional Arms in Soviet Foreign Policy," 12.

¹⁷ McGeorge Bundy et al., "Nuclear Weapons and the Atlantic Alliance," *Foreign Affairs* 60, no. 4 (Spring 1982): 757.

¹⁸ Steven E. Miller and Sean M. Lynn-Jones, eds., *Conventional Forces and American Defense Policy* (Cambridge, Massachusetts: Cambridge Press, 1989), 220.

ground forces. One author provides a succinct, yet accurate depiction of the state of

Flexible Response:

“The credibility of NATO’s threatened escalation gradually eroded, however, with Soviet acquisition of a secure strategic nuclear second-strike capability in the late 1960s, attainment of strategic parity in the mid-1970s, the modernization and buildup of long-range theater nuclear forces beginning in the late 1970s, and the continuing modernization and buildup of Soviet tactical nuclear weapons since the 1980s.”¹⁹

As a result of this realization NATO made a series of steady real improvements in national defense budgets.²⁰ At a meeting in 1977 NATO defense ministers adopted the Long Range Defense Program, a series of improvements in NATO’s conventional and nuclear forces.²¹ In 1985 NATO introduced the Conventional Defense Improvement (CDI) Program.²² For example Belgium increased its defense spending 55% between 1971-1986.²³ Several NATO programs begin to standardize logistical structures, aerial command and control, and communication systems.²⁴ NATO began to deploy large

¹⁹ Gregory Flynn, ed., *Soviet Military Doctrine and Western Policy* (New York: Routledge, 1989), 364.

²⁰ Anthony H Cordesman, *NATO's Central Region Forces* (New York: Jane's Publishing Company Limited, 1988), 14.

²¹ Jeffrey Boutwell, "Strengthening NATO's Conventional Forces," *Bulletin of the American Academy of Arts and Sciences* 42, no. 2 (Nov. 1988): 6.

²² *Ibid.*: 11.

²³ Frank C Carlucci, "Report on Allied Contributions to the Common Defense," (Department of Defense, 1988), 13.

²⁴ *Ibid.*, 6.

numbers of newer models of tanks such as the Leopard II, Abrams, and Challenger.²⁵

This is not to say that the Warsaw Pact was standing still during this period. In fact the Pact's combat capability dramatically improved due to deployment of the T-72 and new tactical aircraft.²⁶ By the late 1980s NATO had finally reached a position that might be described as conventional parity. This creates an opportunity to meaningfully study the potential for conventional conflict in Central Europe as NATO would no longer have to immediately resort to nuclear weapons. Soviet General Secretary Gorbachev began a significant withdrawal of Soviet forces from Eastern Europe in December of 1987. The weather of Central Europe as well as standard military doctrine calls for operations to commence in the late spring or early summer. In order to give the Warsaw Pact the best possible opportunity the conflict will be set in the summer of 1987. The advantage of picking a single season to analyze a potential conflict is that specific information can be gathered about each side's relative capabilities instead of using ranges. The analysis will look at 11 different factors and then draw a conclusion about the probable outcome of

²⁵ Malcolm Chambers and Lutz Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," *International Security* 13, no. 1 (Summer 1988): 12.

²⁶ Hans Gunter Brauch and Robert Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 2vols., vol. 1: Military Balance and Domestic Constraints (New York: Taylor & Francis, 1990), 49.

the invasion. The factors examined will be: reliability of military allies, the non-nuclear argument, Warsaw Pact strategy, NATO strategy, action on Europe's flanks, naval operations, aerial operations, ground forces, mobilization and reinforcement, readiness, and terrain and weather.

CHAPTER 2

RELIABILITY OF MILITARY ALLIES

The first important question when examining a military alliance must be the reliability of the alliance members in a conflict situation. While including a nation's military resources in a tally of an alliance's capabilities can comfort that alliance's other members, this is a dangerous exercise if serious concerns exist about that nation's commitment to the alliance. The difficulty in determining a nation's military reliability is that often the commitment to an alliance is dependent on the scenario and conditions under which commitment will be called for. Conclusions about an alliance's conflict cohesion must follow from an examination of the historical involvement of each nation in the alliance as well as current attitudes and trends in national thought.

NATO and Reliability

NATO's nature contributed to the reliability of its members in a fundamental manner. Each member of NATO maintained a member of its own will and volition and could leave the alliance when and if it decided to. Therefore NATO members felt that

their involvement in the alliance benefited their national interests and security concerns. As an alliance of sovereign states NATO was not always able to make decisions as quickly as efficiently as the Warsaw Pact but never needed to concern itself with coercing its members to support NATO action. Certainly some members of NATO were greater supporters of the alliance than others but the difference was in degrees of commitment, not question of commitment. Generally West Germany was the staunchest supporter of NATO for obvious geographic reasons.²⁷ On the end of the spectrum was Norway, Denmark, and especially France. Norway and Denmark balanced their support for NATO with a desire to keep Cold War tensions at a minimum with the result of appearing less than fully committed to NATO at times. While both Norway and Denmark refused to allow the stationing of foreign troops on their soil, they made extensive arrangements to rapidly reinforce their national ground, air, and sea forces with formations and units from other NATO nations in a crisis. The stalwart participation of Norway and Denmark in NATO exercises also serves to confirm their commitment to NATO. For NATO the real question was France.

²⁷ Ronald D. Asmus, "West German NATO Policy: The Next Five Years," (Santa Monica, CA: RAND Corporation, 1989), 18.

France was one of the founding members of NATO in 1949 and served as one of the occupying Allied powers in Germany after the Second World War. Over the next two decades France grew concerned about the influence that the United States and the United Kingdom wielded in NATO by virtue of their combined economic and military power. The result was the withdrawal of French forces from NATO's military command structure in President De Gaulle in 1968. France ordered the removal of NATO units from its soil but remained a part of the alliance's civilian component. After this France sought to develop an independent voice in European affairs as well as the military power to back up this voice. France began to deploy its own nuclear deterrent force independent of US nuclear capabilities, the *Force de frappe* or "striking force". However by the 1980s France seems to have understood the vital role that it could play in a NATO-Warsaw Pact conflict.²⁸ The French government began to state that it could not guarantee its national security apart from cooperation with other European nations.²⁹ Under President Mitterrand France began moving closer to NATO in terms of

²⁸ Jeffrey Simon, ed., *NATO-Warsaw Pact Force Mobilization* (Washington, DC: The National Defense University Press, 1988), 281-82.

²⁹ "The French Are Ready to Cross the Rhine," *The Economist* July 13, 1985, 43.

cooperation and military policy.³⁰ The French 1st Army was reorganized in 1985 into three mechanized corps well deployed to support NATO. Also in 1985 the French Defense Minister stated that France had “plans to send units of its new Rapid Action Force into West Germany at the first hint of hostilities in Europe.”³¹ France’s commitment to support the FRG was clearly stated on several occasions.³² One of the most telling indicators of French attitudes was the fact that the Soviets assumed that France would join with NATO in the event of conflict.³³ Given French military deployments and public policy it seems clear that France would have wholeheartedly supported NATO if attacked by the Warsaw Pact.

The Warsaw Pact and Reliability

The issue of ally reliability for the Warsaw Pact was much more complex than for NATO. The Soviet Union clearly understood that its presence in Eastern Europe was

³⁰ Peter Wilson and Kevin Lewis, "A Follow-on Strategic Echelon for NATO," (Santa Monica, CA: RAND Corporation, 1985), 20.

³¹ "The French Are Ready to Cross the Rhine," 43.

³² Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 310, James A. Thomson, "An Unfavorable Situation: NATO and the Conventional Balance," (Santa Monica, CA: RAND Corporation, November 1988), 11, John Stokes, "Threat Assessment," (Paris, France: Assembly of the Western European Union, November 1986), 190.

³³ Flynn, ed., *Soviet Military Doctrine and Western Policy*, 257.

generally unpopular, as evidenced by the deployment of Soviet ground troops in an occupational pattern. In terms of military effectiveness the clear implication of this attitude was that Eastern European forces could not be assumed to participate in a Pact invasion without reason. In response the Soviets worked very hard to integrate the upper echelons of Eastern European militaries with their own. An Eastern European officer who desired a command position had to have attended a Soviet military school at some point.³⁴ In 1980 the Soviets pushed a measure through the Warsaw Pact that gave them direct control of Eastern European military forces in an emergency situation.³⁵ The effectiveness of these Soviets efforts needs to be examined on a national basis.

Romania provided the most blatant example of questionable commitment to the Warsaw Pact. Romanian policy towards the Warsaw Pact was characterized by three important decisions. No Warsaw Pact forces were permitted to be stationed or transit through Romanian territory. Romanian combat forces did not take part in Pact field exercises and were not sent outside of Romania. Romania consistently refused to

³⁴ Douglas A MacGregor, "Uncertain Allies? East European Forces in the Warsaw Pact," *Soviet Studies* 38, no. 2 (April 1986): 238-39.

³⁵ Michael Sadykiewicz, "The Warsaw Pact Command Structure in Peace and War," (Santa Monica, CA: RAND Corporation, 1988), vii.

participate in the full Warsaw Pact military command structure.³⁶ Romania was the only Pact nation to refuse to sign the 1980 statute giving the Soviet Union greater control over Pact forces.³⁷ President Ceausescu openly opposed the Pact invasion of Czechoslovakia in 1968 and refused to allow Romanian troops to be involved.³⁸ He also repeatedly called for the Pact and NATO to disband as they were a threat to international peace.³⁹ While the condemnation of NATO is typical of Eastern European nations the comment on the Pact is very telling. Romania openly broke with the Pact on several other points, asking for assurances from the United States that Romanian territory would not be targeted in a strategic nuclear exchange.⁴⁰ Romanian military doctrine is based on territorial defense, self-sufficiency and popular participation. Romania is the only Pact nation to develop an extensive militia, the 1 million strong Patriotic Guards.⁴¹

Romania's public posture, military posture and doctrine, as well as limitations on

³⁶ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 84,489-91, David Miller, *The Cold War: A Military History* (New York: St. Martin's Press, 1998), 66, William J Lewis, *The Warsaw Pact: Arms, Doctrine, and Strategy* (New York: Mc-Graw Hill Publications, 1982), 210.

³⁷ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 36.

³⁸ Lewis, *The Warsaw Pact: Arms, Doctrine, and Strategy*, 216, Miller, *The Cold War: A Military History*, 66.

³⁹ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 489.

⁴⁰ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 85.

⁴¹ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 485-87,92-93.

participation in the Warsaw Pact lead to the conclusion that Romania would work very hard to not participate in a Soviet led invasion of Western Europe.⁴²

For Czechoslovakia and the Warsaw Pact the most important event was the restoration of orthodox Communist rule in 1968. After the invasion the Soviets worked to rebuild the Czech military in order to bring the force back under Communist Party control. This period was characterized by “wide-ranging purges of the officer corps, an unprecedented voluntary exodus of junior officers, serious recruitment problems, low morale, and defiant anti-Soviet attitudes by Czechoslovak soldiers.”⁴³ The result was a massive increase in under-qualified and undereducated candidates receiving officer’s commissions. Czechoslovakia was the only nation in the Warsaw Pact to maintain a Party militia, the People’s Militia, and this corps size unit was equipped with heavy weapons.⁴⁴ This is a clear example of the Czech government’s attitude towards the Czech military. According to the Czech Communist Party the primary purpose of the Czech military was to protect national territory against a re-armed West Germany. When

⁴² Ibid., 496, Michael MccGwire, *Military Objectives in Soviet Foreign Policy* (Washington, DC: The Brookings Institution, 1987), 142.

⁴³ A Ross Johnson, Robert W Dean, and Alexander Alexiev, *East European Military Establishments: The Warsaw Pact Northern Tier* (New York: Crane, Russak & Company Inc., 1982), 114.

⁴⁴ Ibid., 130-31.

Chancellor Willy Brandt began his *Ostpolitik* program of greater contact with Eastern Europe in the early 1970s the stated objective of the military seemed less realistic. All in all it seems that the part of the Czech military that was trained and equipped specifically for combat operations in conjunction with Soviet forces would have performed reliably. It was in these units that the best officers were stationed and they also were the most tightly integrated into the Soviet command structure. However it does not seem that the Soviets could have counted on reserve Czech formations to perform in any function other than internal security. The longer Czech forces were engaged in combat the more likely it would become that Czech reserve forces would cause problems with Pact lines of communication.⁴⁵

⁴⁵ MacGregor, "Uncertain Allies? East European Forces in the Warsaw Pact," 243.

CHAPTER 3

THE NON-NUCLEAR ARGUMENT

An examination of Soviet strategic military doctrine and the situation in Europe demonstrates that by the 1980s the Soviet Union saw a non-nuclear conventional conflict in Europe not only as a potential plan but as a preferred operation. The Soviet attitude towards operations in Europe could be described as conventional preference while retaining a nuclear option. The Soviets arrived at this position due to the conditions under which they planned to use nuclear weapons, improvements in conventional technology, and the challenges resulting from the use of nuclear weapons.

In January 1977 at the city of Tula, Soviet General Secretary Leonid Brezhnev declared that nuclear weapons were an instrument of theory and too horrible to be used as an instrument of policy. By the late 1970s Warsaw Pact war plans assumed that nuclear weapons would only be used in a response to a nuclear NATO first strike.⁴⁶

“None of the plans for the late 1970s and the 1980s speak of a first use of nuclear

⁴⁶ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 27,106.

weapons by the Warsaw Pact without relating it to NATO first use preparations.”⁴⁷

Soviet planners had a clear understanding of NATO’s doctrine of Forward Defense,

under which nuclear weapons would be used if Soviet forces defeated NATO on the

conventional battlefield.⁴⁸ They assumed that a future war would start with conventional

weapons, that NATO would then be defeated on the battlefield, and that in response

NATO would launch its tactical and theater nuclear weapons.⁴⁹ At the same time the

Soviets understood that a pre-emptive nuclear strike would not be able to prevent NATO

from retaliating in kind.⁵⁰ Therefore the utility of a nuclear war as a means to change the

strategic balance in the Soviet Union’s favor was reduced. The Soviets intended to detect

NATO’s preparations for its first strike and then to launch their own weapons just as

NATO’s were launched.⁵¹ “Great care was taken not to proceed to a nuclearization of a

conflict unless the enemy was about to do so; pre-emption and ‘meeting strikes’ would

⁴⁷ Gerhard Wettig, "Warsaw Pact Planning in Central Europe: The Current Stage of Research," *Cold War International History Project Bulletin* 3 (Fall 1993): 444.

⁴⁸ Christoph Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," *Journal of Slavic Military Studies* 17, no. 2 (2004): 318.

⁴⁹ Ibid.: 305, Graham D Vernon, *Soviet Options for War in Europe: Nuclear or Conventional?* (Washington, DC: National Defense University, January 1979), 6.

⁵⁰ Mary C FitzGerald, "Marshal Ogarkov and the New Revolution in Soviet Military Affairs," (Washington, DC: Center for Naval Analyses, January 1987), 5.

⁵¹ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 27-31.

have been seen as a reactive, not an active step towards escalation.”⁵² Pact forces were to look for three signs that NATO was organizing a first strike: withdrawal of NATO troops from the front edge of battle, increased transmission of NATO warning signals, and decentralization of NATO troop concentrations to minimize the effect the Soviet nuclear response.⁵³ This was referred to as a “launch on warning” strategy in the West and a “meeting strike” or “converging strike” strategy in the Soviet Union, similar to the manner in which US strategic nuclear forces were to be used.⁵⁴ In an invasion of Central Europe if NATO was never forced to resort to nuclear weapons then there would be no reason, according to Soviet doctrine, for the employment of nuclear weapons by the Soviet Union.

Developments in technology towards the end of the Cold War made it possible for the Soviets to achieve their objectives in a nuclear strike situation without using nuclear weapons. In a nuclear situation in Europe Soviet objectives were to attack NATO’s nuclear forces and the associated nuclear command, control, and

⁵² Beatrice Heuser, "Warsaw Pact Military Doctrines in the 1970s and 1980s: Findings in the East German Archives," *Comparative Strategy* 12, no. 4 (October 1993): 444.

⁵³ Wettig, "Warsaw Pact Planning in Central Europe: The Current Stage of Research," 444, Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 318.

⁵⁴ Wettig, "Warsaw Pact Planning in Central Europe: The Current Stage of Research," 439.

communication systems in order to limit NATO's ability to use its own nuclear weapons.⁵⁵ In the early 1980s Soviet writers and military leaders began to describe new precision guided munitions as having the same characteristics and capabilities as tactical and theater nuclear weapons.⁵⁶ Advances in Soviet aircraft and weapon design enabled the Soviets to destroy their nuclear strike targets without utilizing nuclear weapons.⁵⁷

The Chief of the Soviet General Staff from 1977 to 1984, Marshal Nikolai Ogarkov stated that

“Rapid changes in the development of conventional means of destruction... make many types of weapons global and make it possible to sharply increase (by at least an order of magnitude) the destructive potential of conventional weapons, bring them closer, so to speak, to weapons of mass destruction in terms of effectiveness. The sharply increased range of conventional weapons makes it possible to immediately extend active combat operations not just to the border regions, but to the whole country's territory, which was not possible in past wars.”⁵⁸

The similarities in destructive power and range of conventional weapons and nuclear weapons were clear to the Soviets.⁵⁹ For the Soviets the substitution of precision guided conventional munitions for nuclear weapons would provide them with several

⁵⁵ Ibid, MccGwire, *Military Objectives in Soviet Foreign Policy*, 76.

⁵⁶ FitzGerald, "Marshal Ogarkov and the New Revolution in Soviet Military Affairs," 8.

⁵⁷ Robert P. Berman, *Soviet Air Power in Transition* (Washington, DC: Brookings Institution, 1978), 71.

⁵⁸ Grove E. Myers, *Aerospace Power: The Case for Indivisible Application* (Montgomery, Alabama: Air University Press, 1986), 39.

⁵⁹ FitzGerald, "Marshal Ogarkov and the New Revolution in Soviet Military Affairs," 9.

advantages. Precision guided munitions avoid the political complications of using nuclear weapons, do not radioactively contaminate the target area which might threaten friendly troops, and do not require the use of multiple weapons to ensure destruction of the target.⁶⁰ The Soviets began to see their conventional forces as capable of achieving their objectives apart from a nuclear strike.⁶¹ Soviet plans began to call for NATO's nuclear capability to be targeted by Soviet tactical aircraft or seized by airborne and heliborne troops.⁶² The Soviets recognized that there were benefits to using conventional weapons when these weapons were just as capable of accomplishing their goals as nuclear weapons.

Soviet military planners were well aware of the difficulties of operating large mechanized formations on the nuclear battlefield. These planners understood that the economic strength of Western Europe was far more valuable to the Soviet Union if it

⁶⁰ Ibid., 9-10.

⁶¹ Mary C FitzGerald, "Marshal Ogarkov on the Modern Theater Operation," (Washington, DC: Center for Naval Analyses, November 1986), 12-13.

⁶² Wettig, "Warsaw Pact Planning in Central Europe: The Current Stage of Research," 442, McGwire, *Military Objectives in Soviet Foreign Policy*, 132,39.

was not damaged by an exchange of nuclear weapons.⁶³ The Soviet military became more aware “that the use of nuclear weaponry would slow down rather than speed up Warsaw Pact military advances to the shores of the North Atlantic.”⁶⁴ While the Soviets could not control NATO’s decision to use nuclear weapons, they could take steps to minimize the potential for nuclear release on their side. Much of the Soviet conventional buildup in the 1970s was aimed at developing a conventional capability that could defeat NATO without the need to use nuclear weapons from the start.⁶⁵ Around 1970 the Soviets began to plan for commencing operations in Europe with conventional forces only.⁶⁶ However Soviet plans stressed that their forces were not to operate in a manner

⁶³ Wettig, "Warsaw Pact Planning in Central Europe: The Current Stage of Research," 51, Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 316-17, Vernon, *Soviet Options for War in Europe: Nuclear or Conventional?*, 5.

⁶⁴ Wettig, "Warsaw Pact Planning in Central Europe: The Current Stage of Research," 51.

⁶⁵ MccGwire, *Military Objectives in Soviet Foreign Policy*, 34-35.

⁶⁶ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 89, Joseph D. Douglass and Amoretta M. Hoerber, *Conventional War and Escalation: The Soviet View* (New York: Crane, Russak & Company, Inc., 1981), 1, Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 61, MccGwire, *Military Objectives in Soviet Foreign Policy*, 34-35, Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 316, Vernon, *Soviet Options for War in Europe: Nuclear or Conventional?*, 7, Mark Kramer, "Warsaw Pact Military Planning in Central Europe: Revelations from the East German Archives," *Cold War International History Project Bulletin* 1 (1992): 15.

that left them vulnerable to nuclear attack.⁶⁷ In a conventional operation Soviet forces were not to concentrate more than necessary in order to minimize the damage that a NATO nuclear strike might cause. In this way the Soviet concern for remaining prepared for nuclear operations would have affected the deployment of Soviet conventional forces. The consequence of this Soviet line of thought would also have been important in the positioning of Soviet naval forces. Given that Soviet planning called for the use of nuclear weapons in response to a NATO nuclear strike, that conventional weapons were seen as capable of achieving the objectives of a Soviet nuclear strike, and the difficulties in operating on a nuclear battlefield, it seems clear that a Soviet invasion of Western Europe in the summer of 1987 would have commenced with the use of only conventional weapons. Soviet forces would have operated in a manner that would limit NATO's ability to launch a damaging nuclear first strike but would not have escalated the conflict to a nuclear level unless NATO did.

⁶⁷ Vasilii Yefisovich Savkin, *The Basic Principles of Operational Art and Tactics: A Soviet View* (Washington, DC: US Government Printing Office, 1973), 255-56, FitzGerald, "Marshal Ogarkov and the New Revolution in Soviet Military Affairs," 5, Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 106-07.

CHAPTER 4

WARSAW PACT STRATEGY

It is important to have an understanding of the several different levels on which Warsaw Pact 'strategy' would have guided an invasion of Western Europe. As a technical term, 'strategy' referred to the highest level of military planning and thought. Operational art referred to "the practice of generals – or their staff colonels – for achieving operational success."⁶⁸ This involved campaign plans and practices on the level of divisions, corps, and armies. Tactics were the domain of regiments and battalions and dealt with fire and maneuver on the field of battle in order to defeat the enemy. Military doctrine can be defined as the "fundamental principles by which military forces or elements thereof guide their actions in support of national objectives."⁶⁹ The Soviet military gave priority to two national objectives: "the achievement of radically favorable shift in the strategic nuclear relationship" and "the

⁶⁸ B.J.C. McKercher and Michael A. Hennessy, eds., *The Operational Art: Developments in the Theories of War* (Westport, Connecticut: Praeger Publishers, 1996), 1.

⁶⁹ Department of Defense U.S., "JSC Pub. 1 (Dictionary of Military and Associated Terms)," (Washington, D.C, Government Printing Office, 1987), 118.

ability to surround or defeat opposing ground forces...within the various theaters of the Eurasian landmass, plus the ability to exploit those successes by investing and occupying the desired territory.”⁷⁰ The second objective was primarily concerned with an invasion of Western Europe. Soviet strategy, operational art, and tactics were designed and formulated in order to achieve these objectives.⁷¹ The Soviet preference for commencing combat operations with only conventional weapons while retaining a nuclear strike capability has already been shown and it is under this assumption that the analysis of Soviet military planning and theory will proceed.

An important initial consideration is the conditions or situation that would cause the Soviet Union to decide to launch this invasion of Western Europe. Any number of potential situations could bring this about and the specific situation is not as important as the Soviet attitude. A degradation of Soviet control over Eastern Europe, a political crisis with China, or a power struggle in another region with the US could all bring the Soviet leadership to see NATO as an imminent threat to Soviet national security.⁷² The Soviets

⁷⁰ Paul H. Nitze and Leonard Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options* (Boulder, Colorado: Westview Press, 1979), 6-7.

⁷¹ Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 84-85.

⁷² Flynn, ed., *Soviet Military Doctrine and Western Policy*, 174, Richard K Betts, "Surprise Attack: NATO's Political Vulnerability," *International Security* 5, no. 4 (Spring 1981): 23.

generally saw NATO not only as a threat to Soviet interests but to the security of the Soviet Union and Eastern Europe.⁷³ However a crisis situation would have been needed for the Soviets to decide that NATO needed to be eliminated as a powerful presence on the European continent.

The Soviet Union clearly recognized its inferior position in terms of economics and population and planned accordingly. In 1985 the Warsaw Pact's combined population stood at 386.4 million and total Gross National Product (GNP) was 2.728 billion dollars.⁷⁴ At the same time NATO included 515.6 million people with a total GNP of 6.089 billion dollars. Therefore any Soviet attack on Western Europe needed to result in a speedy conclusion. If NATO was given the opportunity to deploy and utilize its much greater economic potential and manpower then the Soviet Union could never hope to successfully defeat NATO. An overriding concern for Soviet military planning was the need to quickly defeat NATO. Additionally the Soviets were very concerned that the Chinese might try and take advantage of a war between NATO and the Warsaw

⁷³ Flynn, ed., *Soviet Military Doctrine and Western Policy*, 250.

⁷⁴ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 8, Lutz Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," (Bradford, UK: School of Peace Studies, University of Bradford, 1987).

Pact.⁷⁵ A speedy resolution to this war would allow the Soviets to transfer forces to the Far East to deter any Chinese ambitions.

The best way to bring an invasion of Western Europe to a speedy conclusion was to take the offensive. Soviet military doctrine declared that “the offensive is the main type of combat”⁷⁶ and “the strategy, operational art, and tactics of its [the Soviet Union] military forces and their magnitude, structure, and disposition all suggest a clear offensive character.”⁷⁷ The offensive would be carried out by massing forces to break through the enemy’s front line and then “advance swiftly into the depth of his [the enemy’s] defense and move into operational space”⁷⁸ The “operational space” refers to the area behind the enemy’s front line where deep strategic penetrations can occur. In order to achieve this break through force ratios on the main axis of attack were to be around 4:1 or 5:1.⁷⁹ These ratios were to be reached by concentrating forces on a small

⁷⁵ Dr. Jan Hoffenaar and Christopher Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," ed. Dr. Andreas Wenger and Dr. Victor Mauer (Stockholm, Sweden: Century for Security Studies, Swiss Federal Institute of Technology, April 2006), 119.

⁷⁶ V.G. Reznichenko, *Tactics: A Soviet View* (Moscow: United States Air Force, 1984), 34.

⁷⁷ Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 55.

⁷⁸ Savkin, *The Basic Principles of Operational Art and Tactics: A Soviet View*, 190-91.

⁷⁹ John Erickson, Lynn Hansen, and William Schneider, *Soviet Ground Forces: An Operational Assessment* (Boulder, Colorado: Westview Press, 1986), 162, *Alliance and Defense Capabilities in Europe*, 217, Finley, "Conventional Arms in Soviet Foreign Policy," 20, Unterseher, "Conventional Land

number of breakthrough sectors. The Soviets planned to insert Operational Maneuver Groups (OMGs) into the enemy's rear in order to seize strategic objectives. An OMG would consist be a reinforced tank or motor rifle division⁸⁰, "a combined-arms concept of armor, assault helicopters, self-propelled artillery, rocket launchers, and mobile air defense."⁸¹ These units were to be committed to combat within the first two days apart from the second echelon of Soviet troops.⁸²

The specific operational plan regarding the nature of a Soviet invasion of Western Europe deserves consideration. The invasion would have been conducted under the auspices and command of the Western Theater of Military Operations.⁸³ The Soviet envisioned the use of 5 Fronts⁸⁴: Jutland, Coastal, Central, Luxembourg, and Bavarian.⁸⁵

The Jutland Front would have consisted of primarily East German troops, 3 divisions,

Forces for Central Europe: A Military Threat Assessment," 23, John J Mearsheimer, *Conventional Deterrence* (Ithaca: Cornell University Press, 1983), 173-75.

⁸⁰ Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 86.

⁸¹ David Abshire, *Preventing World War III: A Realistic Grand Strategy* (New York: Harper & Row Publishers, 1988), 103.

⁸² Douglas W Skinner, "Airland Battle Doctrine," (Washington, DC: Center for Naval Analyses, 1988), 36.

⁸³ McCwire, *Military Objectives in Soviet Foreign Policy*, 131.

⁸⁴ Similar to a NATO Army Group in command structure but not size

⁸⁵ Kramer, "Warsaw Pact Military Planning in Central Europe: Revelations from the East German Archives," 14.

advancing into Schleswig-Holstein through the Kiel Canal.⁸⁶ This Front was also responsible for taking the Danish island of Bornholm and launching amphibious and airborne operations against Zealand, northern Denmark.⁸⁷ The Coastal Front was follow the Jutland Front and attack 4-5 days after the initial invasion.⁸⁸ Polish troops made up the Coastal front, 4 divisions, which was to turn west south of Hamburg to take West German's northern ports. The Central Front with Soviet forces would have attacked through the North German Plain along the line Braunschweig-Hannover-Bielefeld-Hamm heading towards the northern Ruhr and then Aachen, Maastricht, and Liege.⁸⁹ The Luxembourg Front, also with Soviet troops, began in Thuringia and was to attack through the Fulda Gap, heading for the Rhine north of Frankfurt towards Reims and Metz. The Bavarian Front of 4 Czech divisions and Soviet forces were to pass through Bavaria and then Baden Wurttemberg towards France.⁹⁰ The Czechs were to form the initial assault group with the Soviet Central Group of Forces on Czechoslovakia used as

⁸⁶ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 102.

⁸⁷ *Ibid.*, 102,10,11.

⁸⁸ *Ibid.*, 111-13.

⁸⁹ Miller, *The Cold War: A Military History*, 359.

⁹⁰ Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 73.

a reserve or an OMG.⁹¹ Soviet plans did not anticipate the violation of Austrian neutrality.⁹² The Soviet objective was to reach the French border after 13-15 days of combat, establish 2 new fronts, and continue the attack through France, reaching the Spanish border by day 30 or 35.⁹³ An East German force of 3 divisions was tasked with taking West Berlin while Eastern European troops garrisoned West Germany.⁹⁴ According to Warsaw Pact planning documents “the goal of the operation is to liberate the territories of the GDR and CSSR, to occupy the economically important regions of the FRG east of the Rhine, and to create the right circumstances for a transition to a general offensive aimed at bringing about the withdrawal of the European NATO states from the war.”⁹⁵ All of these forces would be controlled through the Soviet command

⁹¹ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 205-07.

⁹² Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 79, Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 148.

⁹³ Kramer, "Warsaw Pact Military Planning in Central Europe: Revelations from the East German Archives," 14, Miller, *The Cold War: A Military History*, 362.

⁹⁴ Miller, *The Cold War: A Military History*, 362.

⁹⁵ Kramer, "Warsaw Pact Military Planning in Central Europe: Revelations from the East German Archives," 14-15.

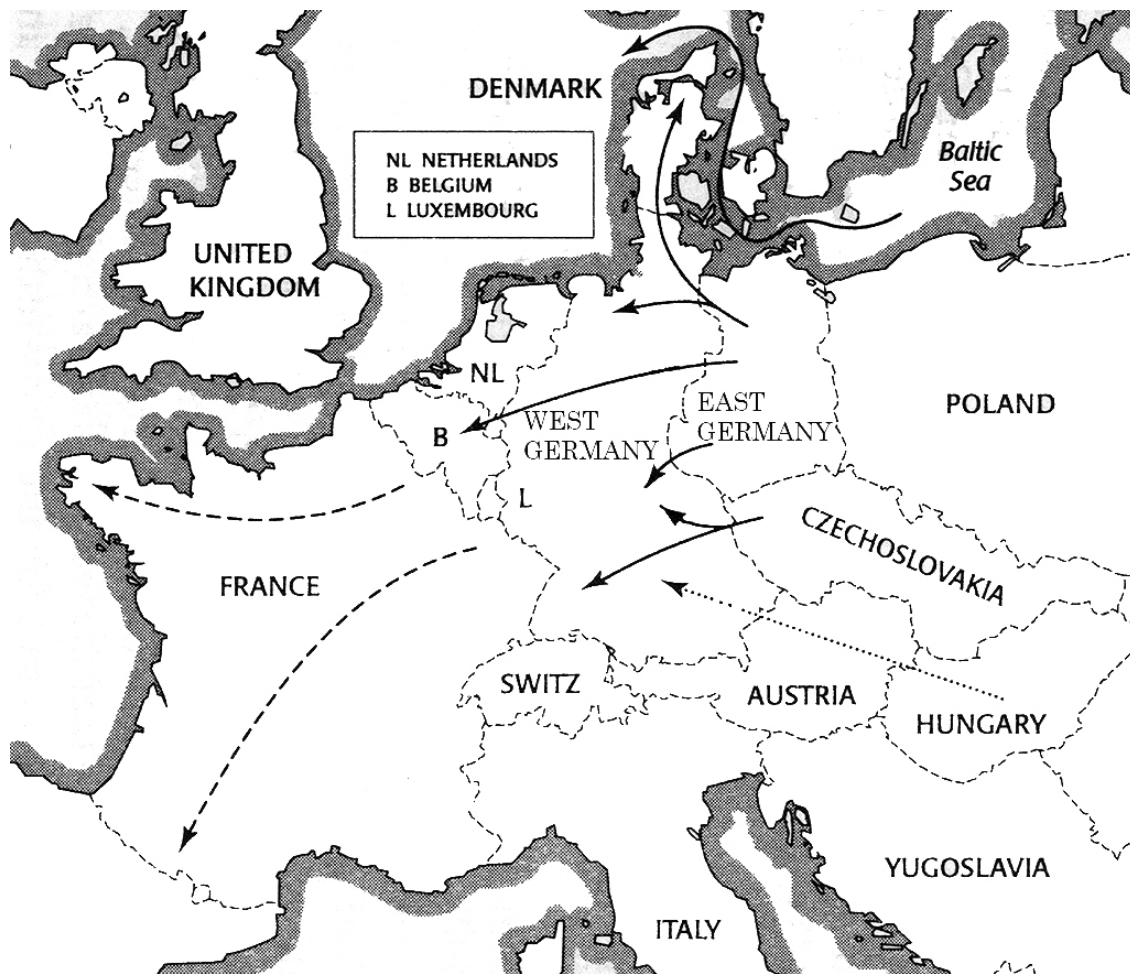


Figure 1 Soviet Invasion Plan⁹⁶

structure as the Warsaw Pact did not have a military command system.⁹⁷ Figure 1 shows a diagram of the Soviet invasion plan. Warsaw Pact forces would have conducted these

⁹⁶ Miller, *The Cold War: A Military History*, 360.

attacks in accordance with clear operational and tactical procedures. Divisions would be committed to combat and then replaced when the entire unit is exhausted and incapable of combat operations.⁹⁸ The attack would begin with offensive probes using motor rifle regiments reinforced with armor.⁹⁹ These units would have sought out “weak points, non-fortified areas, flanks or boundaries between major units.”¹⁰⁰ Once these areas had been identified then armor heavy formations such as tank regiments and tank divisions would have been moved forward.¹⁰¹ If presented with a solid line of prepared positions then attacks would be made by dismounted motor rifle regiments.¹⁰² This would allow the infantry to suppress anti-tank missile defenses on foot. Attacks would be preceded by heavy concentrations of artillery fire designed to further suppress NATO’s anti-tank

⁹⁷ Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 45, Vojtech Mastny, ed., *A Cardboard Castle? An Inside History of the Warsaw Pact, 1955-1991* (Budapest, Hungary: Central European University Press, 2005), 427.

⁹⁸ Elmar Dinter and Paddy Griffith, *Not Over by Christmas: NATO's Central Front in World War III* (New York: Hippocrene Books Inc, 1983), 35.

⁹⁹ John L Romjue, *From Active Defense to Airland Battle: The Development of Army Doctrine, 1973-1982* (Fort Monroe, Virginia: US Army Training and Doctrine Command 1984), 16.

¹⁰⁰ James H. Polk, "The North German Plain Attack Scenario: Threat or Illusion?," *Strategic Review* 8, no. 3 (Summer 1980): 63.

¹⁰¹ Reznichenko, *Tactics: A Soviet View*, 84.

¹⁰² Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 94.

defenses.¹⁰³ The assignment of reinforcements and support units would be dependent on which division or regiment had made the most progress.¹⁰⁴ Each attacking regiment was to attack on roughly a 10 kilometer front.¹⁰⁵ Airborne troops were to be dropped on important crossing points such as roads, bridges, and canals to aid the advance of the main body.¹⁰⁶ Urban combat was to be avoided where possible but if inevitable then the city or town would be attacked by a frontal assault designed to bypass pockets of resistance.¹⁰⁷ This frontal assault would have been similar to the ‘Thunder Run’ that US armored forces launched through Baghdad in March 2003.

Soviet adherence to the stated plan of action was a salient feature of their military planning. The commander would specify the plan of attack including the exact thrust lines that each unit would follow and the time within which each objective was to be reached.¹⁰⁸ Subordinate commanders were required to follow the plan precisely without deviation. “The underlying thought is that with the requisite forethought, staff work, and

¹⁰³ Reznichenko, *Tactics: A Soviet View*, 69,100.

¹⁰⁴ Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 78.

¹⁰⁵ *Ibid.*, 161.

¹⁰⁶ Lewis, *The Warsaw Pact: Arms, Doctrine, and Strategy*.

¹⁰⁷ John C Scharfen, "Soviet Tactical Doctrine for Urban Warfare," (Menlo Park, CA: Stanford Research Institute, 1975), 4-5.

¹⁰⁸ Reznichenko, *Tactics: A Soviet View*, 73.

in-depth planning, the attacking force can scientifically ordain the success of the operation before the first units cross the start line.”¹⁰⁹ This type of military thinking limited the displays of initiative which was crucial to the success of a maneuver based breakthrough operations.¹¹⁰ To achieve a breakthrough commanders needed to be able to move their reserves as opportunities for penetration presented themselves. The Soviet centralized command and control system would have sought in vain to pre-plan where these opportunities would occur.¹¹¹ Reserves and fire support assets were not to be deployed at a local commander’s discretion but as a part of the overall operational plan.¹¹² The senior leadership of the Soviet military recognized the need for initiative on the part of their junior officers but their efforts were “stifled at an intermediate level and by the military education system.”¹¹³ Additionally the Soviet desire for secrecy and compartmentalization would have limited the ability of junior officers to take advantage

¹⁰⁹ Robert R Leonhard, *The Art of Maneuver: Maneuver-Warfare Theory and Airland Battle* (Novato, CA: Presidio Press, 1991), 53, Reznichenko, *Tactics: A Soviet View*, 74,77.

¹¹⁰ Joshua M. Epstein, *Measuring Military Power: The Soviet Air Threat to Europe* (Princeton, New Jersey: Princeton University Press, 1984), 118-19.

¹¹¹ Skinner, "Airland Battle Doctrine," 7.

¹¹² Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 53-54,92.

¹¹³ Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 31, Mearsheimer, *Conventional Deterrence*, 186.

of an opportunity on the ground even if these officers had been prepared to do so. Subordinate commanders were generally given information that only dealt with their area of responsibility.¹¹⁴ One of the clearest examples of the Soviet desire for secrecy occurred at the Strategic Arms Limitation Talks. The Soviet military representatives not to discuss detailed information about Soviet strategic nuclear capabilities and equipment in front of the Soviet Foreign Ministry civilians on the Soviet delegation because they were not cleared for that information.¹¹⁵ This institutional insistence upon limited dissemination of material would have posed challenges for the Soviet ability to conduct a successful breakthrough operation.

Soviet military planners not only withheld vital information from their subordinates but deliberately deceived them as to the nature and capabilities of NATO forces. In all of the Warsaw Pact exercises it was assumed that NATO launched an attack on Eastern Europe and that Warsaw Pact forces were initially on the defensive. However these defensive operations did not receive training time or resources. Only the

¹¹⁴ Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 115-16.

¹¹⁵ Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 310.

mobilization and counterattack portions of these exercises were practiced.¹¹⁶ Given that these exercises were offensive in nature it is clear that “self-deception was integral to Soviet planning”¹¹⁷ Warsaw Pact planning documents never mentioned NATO’s extensive efforts in developing a series of defensive positions as this would counter the Pact’s official position that NATO was an offensive alliance. Only a very few senior officers were aware of the existence of these defenses. These planners also arbitrarily increased the size of NATO forces in their intelligence reports, by doubling the size of the West German army for example, in order to justify the official position.¹¹⁸ This attitude of self-deception would have been only counter-productive in a combat situation.

The Soviet emphasis on political indoctrination also limited their ability to focus on military matters. According to Soviet doctrine the most important indicators of combat readiness were “a correct understanding by commanders, staff, and political

¹¹⁶ Kramer, "Warsaw Pact Military Planning in Central Europe: Revelations from the East German Archives," 45-15.

¹¹⁷ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 27.

¹¹⁸ Kramer, "Warsaw Pact Military Planning in Central Europe: Revelations from the East German Archives," 16-17.

organs of their missions” and the “highly moral-political state of the troops.”¹¹⁹ Combat capabilities were seen as dependent on the level of political fervor in soldiers and the greater the dedication to the Communist Party the greater the efficiency of a formation. Without enough resolution and determination a Soviet unit could accomplish any objective. The end of the 1970s in particular saw a relapse into a Stalinist focus on Marxist doctrine and ideological purity in Soviet military planning as opposed to military professionalism.¹²⁰

In terms of surprise Soviet priorities lay in limiting the time that NATO would have to deploy its troops to combat positions. The Soviets sought tactical, not operational or strategic surprise, as this would enable them to hide the place, weight, and specific timing of their attacks while giving them time to reinforce their forward positions.¹²¹ The Soviet *maskirovka* (‘deception plan’) would have tried to prevent NATO from mobilizing for as long as possible by covering the Warsaw Pact’s

¹¹⁹ Reznichenko, *Tactics: A Soviet View*, 42,106.

¹²⁰ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 36-37.

¹²¹ Polk, "The North German Plain Attack Scenario: Threat or Illusion?," 64.

mobilization.¹²² On the whole Soviet plans were designed to bring about a rapid defeat of NATO through the use of breakthrough operations. However problems such as unnecessary secrecy, self-deception, lack of initiative, and over-centralization would have hindered Warsaw Pact forces as they sought to carry out these plans. While Soviet operational art and doctrine were sound, institutional challenges in the Soviet system would have worked against the successful execution of a high speed deep penetration operation.

¹²² Kim R Holmes, "Measuring the Conventional Balance in Europe," *International Security* 12, no. 4 (Spring 1988): 170.

CHAPTER 5

NATO STRATEGY

NATO doctrine was certainly not as homogenous as Warsaw Pact doctrine due to the greater voice that each member of NATO had in the military decision making process. NATO members agreed on the broad strategic strokes describing how their militaries' would fight and even some similar operational concepts. At the same time national militaries were free to define their own operational and tactical doctrines within the NATO framework. NATO's two strategic objectives were deterrence and defense. NATO's "military posture is based on the principle that the member countries must collectively maintain adequate defense to deter aggression, and should deterrence fail, to preserve their territorial integrity."¹²³ NATO's two strategic doctrines were Flexible Response and Forward Defense. Flexible Response involved military forces "sufficient to deter aggression, and should deterrence fail, be capable of direct defense, including

¹²³ North Atlantic Treaty Organization, *The North Atlantic Treaty Organization: Facts and Figures* (Brussels, Belgium: NATO Information Service, 1989), 207. See also ———, *NATO and the Warsaw Pact: Force Comparisons* (Brussels, Belgium: NATO Information Service, 1984), 2.

escalation under political control, to the level of response necessary to convince the aggressor of the defender's determination and ability to resist, thus persuading him to cease the attack and withdraw."¹²⁴ NATO would deploy forces to deter an attack, use those forces to defend NATO territory against the attacker, and utilize nuclear weapons if a conventional defense was not enough to protect the NATO member.¹²⁵ The introduction of nuclear weapons would begin on a tactical and theater level but NATO's ultimate guarantee of deterrence was the US strategic nuclear arsenal which was to be used against the Soviet Union as the final step in Flexible Response. The principle of Forward Defense or *Vorneverteidigung* to its West German authors "means a defensive posture in which the defensive battle commences at the border and yields no territory without a fight."¹²⁶ For the West Germans participation in NATO was contingent upon the defense of their entire territory. The West German government clearly stated that "because of the lack of depth, the high population density, and heavy industrialization, of the Federal Republic of Germany, there is no military operational alternative to

¹²⁴ Organization, *The North Atlantic Treaty Organization: Facts and Figures*, 218.

¹²⁵ Pedlow, "NATO Strategy Documents 1949-1969," XXV.

¹²⁶ Ulrich de Maiziere, *Armed Forces in the NATO Alliance* (Washington, DC: Center for Strategic and International Studies, 1976), 16.

immediate initiation of a cohesive defense close to the border.”¹²⁷ Over a fourth of West Germany’s population and industrial capacity lay within 100 kilometers of the Inner German Border (IGB).¹²⁸ Therefore there was no question of falling back across West Germany in order to wear down and spread out Warsaw Pact attackers. This position had implications for NATO’s view of defensive fortifications. West German leaders were adamantly opposed to the construction of fixed fortifications because this seemed to be implicitly abandoning that part of West Germany between the IGB and the fortifications.¹²⁹ NATO’s member states developed their national military doctrines within the framework of Flexible Response and Forward Defense.

An understanding of NATO’s command structure will be helpful in examining NATO’s military doctrine. During the Cold War there were three NATO supreme commands: Allied Command Europe (ACE) under the command of the Supreme Allied Commander Europe (SACEUR), Allied Command Atlantic (ACLANT) under the command of the Supreme Allied Commander Atlantic (SACLANT), and Allied

¹²⁷ Federal Minister of Defence, *White Paper 1985: The Situation and Development of the Federal Armed Forces* (Bonn: Federal Ministry of Defence, 1985), 35.

¹²⁸ Mako, *US Ground Forces and the Defense of Europe*, 32.

¹²⁹ Holmes, "Measuring the Conventional Balance in Europe," 171.

Command Channel (ACCHAN) under the Commander in Chief Channel (CINCHAN).

ACE was divided into Allied Forces North, Center, and South (AFNORTH, AFCENT, and AFSOUTH). AFNORTH was responsible for Norway and Denmark while

AFSOUTH defended the Mediterranean. The most important region was AFCENT

which dealt with Central Europe. AFCENT was divided into the Northern Army Group

(NORTHAG) and the Central Army Group (CENTAG). From north to south

NORTHAG controlled I Netherlands, I West German, I British, and I Belgian Corps.

Likewise CENTAG had III West German, V US, VII US, and II West German Corps.¹³⁰

The deployment of the NATO corps is shown in Figure 2.

¹³⁰ Laurence Martin, *Before the Day After: Can NATO Defend Europe?* (Northants, England: Newnes Books, 1985), 15, David C Isby and Charles Kamps, *Armies of NATO's Central Front* (London: Jane's Publishing Company Limited, 1985), 32.

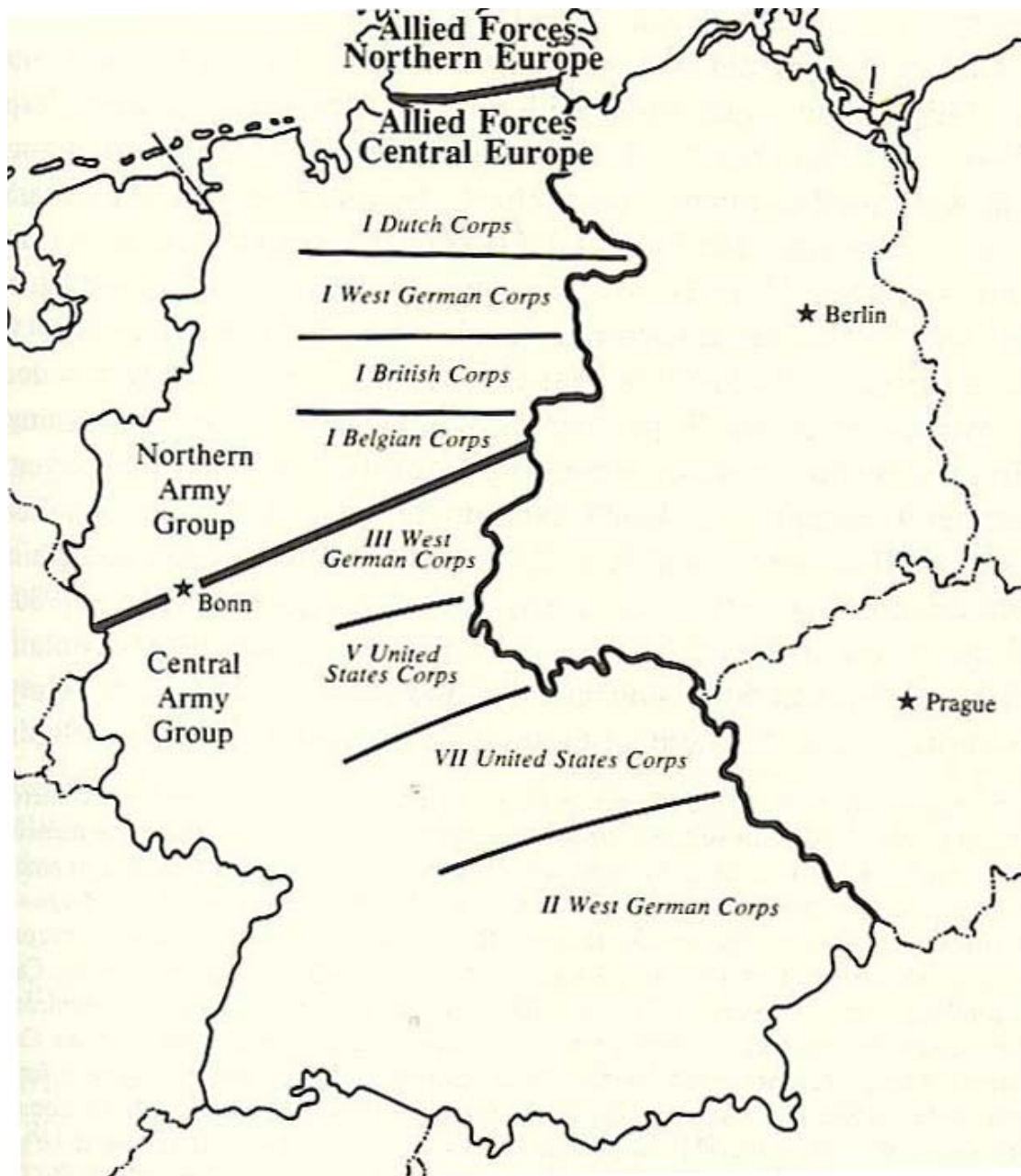


Figure 2 NATO Corps Sectors¹³¹

¹³¹ Pat Hillier, "Strengthening NATO: POMCUS and Other Approaches," (Washington, DC: Congressional Budget Office, 1979).

There were several areas in which NATO was able to build common operational doctrine. For example NORTHAG agreed in 1986 to concentrate its armor reserves for counterattacks rather than spreading them out throughout the front line.¹³² NATO developed plans to move forces from one army group or corps sector to another to reinforce threatened portions of the line.¹³³ The concept of Follow On Forces Attack (FOFA) was adopted by NATO in the early 1980s. FOFA called for NATO to strike, primarily using tactical aircraft and attack helicopters, reinforcing Warsaw Pact units and their associated transportation systems.¹³⁴ Early in a conflict NATO forces would focus on disrupting Warsaw Pact forces through attacks on command and control facilities and electronic warfare.¹³⁵ NATO forces also agreed upon a minimum threshold of defending forces that they would work towards. Each NATO brigade was to hold about between 7-15 kilometers of the front line depending on the terrain in the area.¹³⁶

¹³² Hugh Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 2 ed. (London: Routledge, 1989), 360.

¹³³ *Alliance and Defense Capabilities in Europe*, 150.

¹³⁴ *Ibid.*, 211.

¹³⁵ US Congress. Senate Committee on Armed Services, *National Security Strategy*, 100th Cong., 1st sess., March 25 1987, 392.

¹³⁶ *Alliance and Defense Capabilities in Europe*, 141, Mearsheimer, *Conventional Deterrence*, 44, Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 26, Mako, *US Ground Forces and the Defense of Europe*, 37.

The NATO armies generally invested more personnel and resources in command and control structures in order to keep the maximum number of brigades in combat at a time. The fact that NATO was faced with a defensive operation also contributed to common practices. NATO units would have sought to deploy in covered areas that prevented attacking forces from seeing them. This also would give NATO forces the first shot in any particular engagement.

In terms of military doctrine NATO militaries started with different building blocks. West Germany, Belgium, and the Netherlands used the brigade as the lowest independent combat formation while the US, UK, and France used the division.¹³⁷ This difference as well as national military structures resulted in varying views as to the use of combat formations in a defensive setting. For example French divisions, which were smaller than other NATO nations, were trained to conduct highly mobile, shock oriented counter attack operations.¹³⁸ The United States' AirLand Battle will be examined later but suffice it to say that AirLand served to make corps level of decision making as important as the divisional level.¹³⁹ German and Dutch doctrine called for the use of

¹³⁷ Dinter and Griffith, *Not Over by Christmas: NATO's Central Front in World War III*, 39.

¹³⁸ *Ibid.*, 46.

¹³⁹ Skinner, "Airland Battle Doctrine," 12.

maneuver to reinforce threatened sectors and counterattack an attacker's flanks. German forces operated according to the concept of *Auftragstaktik*, "mission orders", in which subordinate commanders were given their objectives and then allowed the freedom to act as they saw fit.¹⁴⁰ German officers were trained to respond to circumstances without direction from higher headquarters.¹⁴¹ Belgian forces were trained to conduct a more set-piece stubborn defense where reserves were fed into battle to reinforce units under attack.¹⁴²

British military doctrine was an interesting blend of fire and maneuver components. Their operational tactics, called Framework Defense are described as follows:

"The infantry will entrench, creating fields of fire between a network of strong points. It will deploy its anti-tank weapons so as to be able both to attack oncoming vehicles and also to allow them to pass engage them from the rear. The British will enfilade and attack from the flank. A screen of light reconnaissance tanks will identify the main direction of the enemy thrusts; other British tanks will hold the

¹⁴⁰ Romjue, *From Active Defense to Airland Battle: The Development of Army Doctrine, 1973-1982*, 58-59.

¹⁴¹ Skinner, "Airland Battle Doctrine," 40.

¹⁴² Dinter and Griffith, *Not Over by Christmas: NATO's Central Front in World War III*, 40.

open ground between the anti-tank networks and one of the three armored divisions will be kept in reserve."¹⁴³

Two of the British armored divisions would use this positional defense schema while the other armored division would be kept in reserve. Another infantry division would be used for rear area security and deep reserve.¹⁴⁴ British tactics could be described as a 'sponge defense' designed to slowly soak the momentum and strength from an enemy attack.

During the 1970s the United States Army operated under a doctrine known as Active Defense. Active Defense focused on the strategic constraints of fighting outnumbered, forward defense, and the imperative of winning the first battle through the concentration of firepower at the *Schwerpunkt*, the point of maximum enemy effort.¹⁴⁵ Once the *Schwerpunkt* was identified then US battalions would be shifted to maximize the fire brought to bear on the enemy.¹⁴⁶ The Army realized that while these tactics

¹⁴³ Hew Strachan, "Conventional Defense in Europe," *International Affairs* 61, no. 1 (Winter 1984/1985): 30-31.

¹⁴⁴ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 364-65.

¹⁴⁵ Saul Bronfeld, "Fighting Outnumbered: The Impact of the Yom Kippur War on the U.S. Army," *Journal of Military History* 71, no. 2 (April 2007): 483.

¹⁴⁶ Romjue, *From Active Defense to Airland Battle: The Development of Army Doctrine, 1973-1982*, 6-9.

would provide for the defeat of the first echelon of Warsaw Pact forces there would be several more waves of divisions that would attack later. As a result of this understanding as well as the Israeli experience in the Yom Kippur War of 1973 the Army developed AirLand Battle.¹⁴⁷ AirLand Battle called for the use of superior US firepower, technology, maneuverability¹⁴⁸, and initiative to defeat a Soviet attack at the point of contact as well as in the enemy's rear. US officers were trained in the German model of *Auftragstaktik* so as to be able to take advantage of holes in Soviet formations that would appear in the chaos and disruption of the modern battlefield.¹⁴⁹ AirLand was a "blend of classical Soviet maneuver theory with... attrition-oriented... American warfighting doctrine"¹⁵⁰ AirLand sought to take advantage of Soviet tactical rigidity, wave attack style, and technology inferiority. A key part of this was the interdiction of Warsaw Pact forces through the use of tactical airstrikes and long range artillery attacks. These forces could be targeted because of the deployment in 1986 of the JSTARS¹⁵¹ aircraft that was

¹⁴⁷ Bronfeld, "Fighting Outnumbered: The Impact of the Yom Kippur War on the U.S. Army," 473-74.

¹⁴⁸ Skinner, "Airland Battle Doctrine," 10.

¹⁴⁹ Romjue, *From Active Defense to Airland Battle: The Development of Army Doctrine, 1973-1982*, 58-59.

¹⁵⁰ Leonhard, *The Art of Maneuver: Maneuver-Warfare Theory and Airland Battle*, 165.

¹⁵¹ Joint Surveillance and Target Attack Radar System

equipped with long range ground surveillance radar.¹⁵² AirLand Battle would have enabled US forces to get the maximum result from their strengths while targeting Soviet weaknesses.

In examining NATO's doctrine perhaps the greatest advantage of the Alliance was that its forces were fighting on the defensive over terrain they practiced and trained on regularly. Historically the defense enjoyed a 3:1 advantage over the attack, all things being equal.¹⁵³ While this ratio provides no guarantees for any defender it does highlight the advantage of the defense. Whereas the attacker must move out and expose his forces in order to take ground and find the defender, the defender can utilize concealment and pre-positioning to catch the attack unaware and out of position. NATO's members sought to utilize as much of the terrain in West Germany as possible for their operations and all had a clear understanding, if not interpretation, of the need for defensive tactics to be responsive to enemy thrusts and not a simple linear schema.

¹⁵² Skinner, "Airland Battle Doctrine," 41.

¹⁵³ Mearsheimer, *Conventional Deterrence*, 51.

CHAPTER 6

EUROPE'S FLANKS

While the decisive theater of operations in a Warsaw Pact invasion of Western Europe the course of events on Europe's flanks could have had an influence on the outcome of combat in Central Europe. Europe's flanks were generally the areas covered by NATO's AFNORTH and AFSOUTH commands, primarily Norway, the Mediterranean, northern Italy, and European Turkey. For example if the Soviet Union would have been able to neutralize or occupy the airfields in northern and central Norway then the deployment of Soviet naval vessels into the Atlantic would be eased. If NATO had been able to hold onto northern Norway then the establishment of naval superiority in the Norwegian Sea would have been eased. The most probable outcome of events associated with an invasion of Western Europe in the summer of 1987 will be determined through an abbreviated campaign analysis.¹⁵⁴

¹⁵⁴ An assessment of the capabilities of military forces for a specific operational situation

Norway

Soviet plans called for a dual invasion of northern Norway through overland operations and a seaborne amphibious operation under the command of the Northwestern Theater of Military Operations.¹⁵⁵ The Soviet objective was to neutralize or occupy the NATO airfields, especially at Bodo, that would have supported aircraft patrolling submarine barriers and assisting the advance of NATO carrier battle groups.¹⁵⁶ Control of these airfields would have allowed the Soviets to place their own aircraft there which could then be used to degrade NATO's control of the Norwegian and North Seas. NATO would have sought to protect Norway's territorial integrity and ensure NATO control of the northern Norwegian airfields. The Soviets would have had a naval infantry brigade for use in the amphibious operation and two motor rifle divisions kept at a high state of readiness on the Kola Peninsula. There were a further 6 motor rifle divisions further south near Leningrad that would have been available for 30 days of

¹⁵⁵ Bengt Gustafsson, "The Soviet Threat to Sweden During the Cold War," (Zurich, Switzerland: Parallel History Project, February 2008).

¹⁵⁶ John Lund, "Don't Rock the Boat: Reinforcing Norway in Crisis and War," (Santa Monica, CA: RAND Corporation, 1989), 33.

mobilization.¹⁵⁷ The Norwegians could have had over 5 brigades of troops in northern Norway within several days of mobilization, supported by a brigade of UK-Dutch Commandos, the two brigade sized Allied Mobile Force, and a US Marine Amphibious Brigade.¹⁵⁸ All in all NATO would have had around 9 brigades of forces to defend northern Norway with in a conflict situation. Northern Norway was a mountainous area dominated by treeless high plateaus divided by long, narrow lakes that extend inland from the fjords. Only one road runs from north to south in northern Norway which would have channeled attacking forces. The melting snow and permafrost make movement of large forces very difficult in the summer and the length of the fjords create natural chokepoints.¹⁵⁹ The Soviet amphibious force could only launch operations as an outflanking maneuver and could not take and hold territory unreinforced.¹⁶⁰ This unit most probably would have been contained wherever it landed on the north Norwegian

¹⁵⁷ James G. Terry, "Factors Affecting the Military Environment of North Norway: Its History, International Relations, Physical Characteristics, and Balance of Military Forces," (Santa Monica, CA: RAND Corporation, 1988), 35-36.

¹⁵⁸ Richard A. Bitzinger, "Denmark, Norway, and NATO: Constraints and Challenges," (Santa Monica, CA: RAND Corporation, 1989), 13-14, Terry, "Factors Affecting the Military Environment of North Norway: Its History, International Relations, Physical Characteristics, and Balance of Military Forces," 51.

¹⁵⁹ Terry, "Factors Affecting the Military Environment of North Norway: Its History, International Relations, Physical Characteristics, and Balance of Military Forces," 26-32.

¹⁶⁰ Lund, "Don't Rock the Boat: Reinforcing Norway in Crisis and War," 36.

coast. Soviet plans did not call for a violation of Swedish neutrality as this would upset the already perilous balance of forces in the north.¹⁶¹ Given the excellent defensive terrain and the reinforcements that Norway and other NATO nations could have brought to bear it does not seem that the Soviets would have been able to occupy the airfields in northern Norway. The 7 Soviet brigades in the area would have had a hard time making progress against the 9 NATO brigades.

The Mediterranean

The Mediterranean theater consisted of three separate operations: an invasion of northern Italy, naval combat in the Mediterranean Sea, and an invasion of European Turkey. An examination of the situation in Turkey will aid in the analysis of the other two operations. Warsaw Pact objectives in European Turkey were the capture of the Dardanelles in order to allow the Soviet Black Sea Fleet to reinforce the squadron the Soviets kept in the Mediterranean. Given that Romania would have sought to be excluded from any Warsaw Pact offensive operation and would not have allowed Soviet troops to cross their territory, the options for the Warsaw Pact would have been limited. Bulgaria would have had to carry the assault with minimal assistance from Soviet

¹⁶¹ Gustafsson, "The Soviet Threat to Sweden During the Cold War."

ground forces. Bulgaria's small army would have taken time to become combat ready and even then was outnumbered by Greek and Turkish forces.¹⁶² Given these discrepancies it seems clear that NATO would have been able to hold onto the Dardanelles. This would have ensured that NATO naval forces in the Mediterranean would have faced only the small Soviet squadron kept there. NATO's maritime strength in that region significantly outmatched the Soviet squadron and NATO's naval forces would have prevailed with some losses.¹⁶³ The balance of NATO and Warsaw Pact forces available for use in northern Italy would have provided neither side with a clear advantage.¹⁶⁴ Warsaw Pact units would have had to cross through Yugoslavia to reach northern Italy, giving Italian commanders plenty of warning time. Italian strategy was well suited to delaying Pact forces in the mountainous terrain that dominates northern Italy. The terrain formed natural chokepoints and defensive barriers that Italian forces planned to utilize.¹⁶⁵ Italian forces would have enjoyed air support from NATO naval

¹⁶² Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 117,455-71.

¹⁶³ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 190. The balance of naval forces in the Mediterranean is discussed more fully in Chapter 6.

¹⁶⁴ David A. Shlapak, Samuel Gardiner, and William Simons, "Sample Campaign Plans and Staff Assessments for NATO's Southern Region," (Santa Monica, CA: RAND Corporation, 1989), 22.

¹⁶⁵ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 239-40.

units as well as from land based aircraft. Given the forces that both sides could have brought to bear and the excellent defensive terrain of Northern Italy it seems that Warsaw Pact forces would not have made significant progress, if any.

Conclusion

Overall it seems that NATO had taken sufficient measures to ensure the security of its flanks. In both locales NATO's superiority in naval forces would have served to aid the Alliance's defensive operations. Warsaw Pact forces would have been sufficient to tie down the NATO forces assigned to the flanks and could have drawn in the reinforcements earmarked for those areas. This would have prevented NATO from transferring some of its forces from the flanks to the center, which certainly would have served the Pact's objectives. In the north NATO deployed primarily light infantry and naval forces that would have served to aid the battle for the Central Front even if they had been available. In the south geographic barriers prevented NATO from reinforcing the Central Front from Italy, Turkey, or Greece. All in all it seems that the battles for the flanks would have gone in NATO's favor, though units in these regions would have not been available for use in Germany for either side.

CHAPTER 7

NAVAL FORCES AND OPERATIONS

Maritime considerations would have played a critical role in any Warsaw Pact-NATO confrontation due to the inherent flexibility and capacity of sea power. In order to determine the effect of sea power on a Soviet invasion of Western Europe the naval objectives and priorities of each alliance must be established. Then the forces available for each alliance must be considered along with their capabilities. Finally a look at operational plans will allow conclusions to be drawn about the relative ability of each side to accomplish its naval objectives.

Maritime Roles

For the Soviet Union the 1980s saw the culmination of a period of naval expansion and modernization under the leadership of Fleet Admiral Sergei Gorshkov, who served as Commander in Chief of the Soviet Navy from 1956-1985¹⁶⁶. Gorshkov was instrumental in transforming the Soviet Navy from a coastal defense force with

¹⁶⁶ Ronald J. Kurth, "Gorshkov's Gambit," *The Journal of Strategic Studies* 28, no. 2 (April 2005): 267.

limited deep water abilities to an ocean going fleet with ships on deployment all around the world. Soviet naval thinking viewed Soviet ballistic missile submarines (SSBNs)¹⁶⁷ as their most important naval asset due to the more secure nuclear capability these ships provided. Given the Soviet insistence on preparing for and retaining nuclear capabilities even in a conventional combat scenario, SSBNs were a critical part of Soviet strategic doctrine. While ICBMs¹⁶⁸ and bombers could be targeted by American missiles and aircraft wholesale, it would be much more difficult for a large portion of the Soviet SSBNs to be destroyed in a short period of time. Ensuring the security of these ships so that they could perform “counter-value action against the shore”¹⁶⁹ was the primary role of Soviet naval forces. In a nuclear war situation these SSBNs would have acted as the ultimate deterrent against a US first strike. They would have survived such a strike and been able target American cities with their missiles. Here again we see the Soviet fixation on the potential for nuclear combat affecting the deployment and usage of conventional forces. In terms of affecting the ground war in Central Europe the most

¹⁶⁷ A nuclear power submarine armed with long range nuclear missiles

¹⁶⁸ Intercontinental Ballistic Missile: land-based long range nuclear missile

¹⁶⁹ James M McConnell, "Soviet Military Strategy Towards 2010," (Washington, DC: Center for Naval Analyses, 1989), 13.

effective use of Soviet naval forces was attacking NATO SLOCs but Soviet doctrine dictated that the Soviet Union be prepared at all times for a nuclear conflict with the result that Soviet naval forces were kept far to the north of NATO's shipping lanes.

According to Soviet writings Soviet naval forces would have had several wartime missions and goals during a conventional war in Europe. The Soviet wartime naval missions, in order of importance, were: strategic nuclear strike, destruction of enemy naval forces, support for ground force operations, interdiction of enemy sea lines of communication (SLOCs)¹⁷⁰, and protection of Soviet SLOCs.¹⁷¹ The first mission would have been accomplished through creating bastions where Soviet SSBNs would deploy and then defending these bastions from NATO antisubmarine (ASW)¹⁷² units such as nuclear attack submarines (SSN)¹⁷³ and carrier battle groups (CVBG)¹⁷⁴. Destruction of enemy naval forces involved specific attacks on NATO SSBNs and NATO carriers in

¹⁷⁰ SLOC: primary maritime routes between ports used for trade, transport, and logistics

¹⁷¹ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 84., Vladimir Kuzin and Sergie Chernyavskii, "Russian Reactions to Reagan's 'Maritime Strategy'," *The Journal of Strategic Studies* 28, no. 2 (April 2005): 433. Kuzin and Chernyavskii list essentially the same missions in a slightly different order

¹⁷² Anti-Submarine Warfare: ships, planes, and submarines that have specialized equipment, training, and tactics to attack submarines

¹⁷³ SSN: nuclear power attacked submarine loaded with anti-ship missiles and torpedoes

¹⁷⁴ A US aircraft carrier and its escorting warships, usually 6-8 escorts

order to achieve a favorable change in the strategic nuclear balance.¹⁷⁵ Ground force support meant the landing of amphibious troops on enemy shorelines and the interdiction of NATO amphibious assaults. NATO SLOCs would be targeted through attacks on ships at sea, air strikes on port terminals, and the mining of NATO ports.¹⁷⁶ Soviet SLOCs would be secured by protecting Soviet territorial waters. The wartime deployment of Soviet maritime forces was designed to aid the ground offensive through the accomplishment of these objectives.

Soviet naval doctrine was “fundamentally defensive and territorial”.¹⁷⁷

“Fundamental to Soviet naval strategy is the concept of area defense based on two zones: an inner one, where superiority of force would allow local command of the sea to be secured, and an outer zone, where command would be actively contested.”¹⁷⁸ The outer zone included the Norwegian, North, and Eastern Mediterranean Seas while the inner zone comprised the Black, Baltic, and Barents Seas. The Baltic Fleet, Black Sea Fleet, and 5th *Eskadra* were focused on supporting ground force operations and

¹⁷⁵ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 7.

¹⁷⁶ *Ibid.*, 86.

¹⁷⁷ Christopher A. Ford and David A. Rosenberg, "The Naval Intelligence Underpinnings of Reagan's Maritime Strategy," *The Journal of Strategic Studies* 28, no. 2 (April 2005): 385.

¹⁷⁸ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 88.

preventing NATO offensive naval operations.¹⁷⁹ The primary provinces of the Northern Fleet were SSBN bastion defense, attacks on NATO SSBNs and carriers, and SLOC interdiction. In general Soviet naval priorities reflect those of a continental land power and not a maritime nation.

While Soviet naval missions were primarily focused on sea denial and support of ground operations, NATO's naval forces were dedicated to securing and retaining command of the seas.¹⁸⁰ NATO's wartime naval missions were, in order of importance: defend Europe's flanks, protect NATO SLOCs, neutralize Soviet SSBNs, and maintain maritime supremacy in the North Atlantic.¹⁸¹ The defense of Europe's flanks involved protecting Norway, Iceland, Denmark, and the United Kingdom in the north and preventing the Soviet Black Sea Fleet from entering the Mediterranean in the south.¹⁸² NATO needed to be able to move troops primarily from North America to Europe and the ships and port facilities involved in this transfer were to be defended from Soviet

¹⁷⁹ Ibid., 116.

¹⁸⁰ Organization, *NATO and the Warsaw Pact: Force Comparisons*, 14, Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 172.

¹⁸¹ Organization, *The North Atlantic Treaty Organization: Facts and Figures*, 212. Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 189.

¹⁸² Organization, *NATO and the Warsaw Pact: Force Comparisons*, 15.

attack. Soviet SSBNs in their bastions would have come under attack by NATO ASW forces, particularly submarines. Maritime supremacy in the North Atlantic was to be ensured through hunting down any Soviet naval units in the area and then preventing further Soviet maritime forces from gaining access.

The US Maritime Strategy was an important component of NATO naval strategy and will therefore be examined in some depth. In the late 1970s and early 1980s the US Navy had very specific intelligence about Soviet naval war planning and Soviet perceptions of US naval strategy.¹⁸³ The Soviet reliance on their SSBNs in a nuclear war situation and the corresponding develop of a defensive bastion system was well understood by US intelligence and the CIA recommended that the US Navy develop a method of operation that would challenge this reliance.¹⁸⁴ In response to this intelligence and understanding of Soviet naval strategy the Maritime Strategy was developed under Secretary of the Navy John Lehman.

The Navy defined the Maritime Strategy by saying “options are available for early, offensive action to destroy enemy maritime forces as far forward as possible,

¹⁸³ Ford and Rosenberg, "The Naval Intelligence Underpinnings of Reagan's Maritime Strategy," 382.

¹⁸⁴ *Ibid.*: 384.

aggressively protect sea lines of communication, support and influence land battles, and secure favorable war termination.”¹⁸⁵ The Maritime Strategy called for three types of operations to be conducted in the event of a conventional war with the Soviets. US and NATO SSNs were to move into the Norwegian and Barents seas to attack Soviet submarines. US submarine launched cruise missiles and carrier tactical aircraft would attack Soviet fleet units and the network of Soviet naval facilities on the Kola Peninsula. US CVBGs were to defend Norway from Soviet invasion. The Maritime Strategy was to take place in conjunction with the more traditional barrier defense and convoy escort strategies.¹⁸⁶ Barrier defense called for NATO to deploy patrol aircraft, surface ships, and submarines along two ‘gaps’ to interdict the movement of Soviet submarines. Those two gaps are the Greenland-Iceland-UK (GIUK) Gap and the North Cape Gap between Svalbard Island and northern Norway. According to CINCLANT¹⁸⁷, Admiral Lee Baggett Jr., the first priority for the Maritime Strategy was control of the Norwegian Sea as this would “be essential for the containment of the Soviet Northern Fleet and for

¹⁸⁵ US Congress. Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 99th Cong., 2nd sess., April 15, 16, 17 1986, 1088.

¹⁸⁶ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 171.

¹⁸⁷ The NATO Commander in Chief Atlantic

power projection on NATO's northern flank."¹⁸⁸ The Maritime Strategy broke from previous US doctrine in several ways, particularly its offensive flavor, but also in that it did not call for the transfer of units, particularly carriers and their escorts, from the US Pacific Fleet (3rd Fleet) to the Atlantic Fleet (2nd Fleet).¹⁸⁹ The execution of the Maritime Strategy would see the movement of US CVBGs and SSNs into the Norwegian and Barents Sea near the start of a conventional war. On the whole the Maritime Strategy sought to give NATO the strategic initiative at sea by forcing the Soviets to respond to NATO operations.

Soviet Maritime Forces

Soviet naval forces had been built up to an impressive size by 1987 given the limited ability of the Soviet Navy to project power earlier in the Cold War. Soviet forces were divided into four fleets that were each focused on different areas. The Northern Fleet operated out of a series of shipyards and docks on the Kola Peninsula centered on Murmansk. The Northern Fleet was primarily responsible for operations in the Barents and Norwegian Seas and the Arctic and Atlantic Oceans. The Northern Fleet was the

¹⁸⁸ *National Security Strategy*, 867.

¹⁸⁹ *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 1192.

largest of all the Soviet fleets and contained large numbers of submarines, surface combatants, patrol and strike aircraft, and patrol ships. The Baltic Fleet was based at Kaliningrad and focused on the Baltic and North Seas. The Baltic Fleet consisted primarily of smaller surface combatants, amphibious transports, fast attack craft, and older submarines. These units were to assist in taking control of the Baltic Sea and launching amphibious operations to capture Denmark and the exits from the Baltic Sea. The Black Sea Fleet operated out of Sevastopol and kept ships, the 5th *Eskadra* (Squadron), deployed in the Mediterranean Sea. The Pacific Fleet was based at Vladivostok and was concerned with the Pacific Ocean. Table 1 shows the deployment of Soviet naval forces in the summer of 1987 according to fleet. Some Warsaw Pact members also maintained small navies and these units would have been controlled by one of the Soviet fleets in wartime. The naval strength of the Warsaw Pact members is shown in Table 1 according to their natural deployment area.

Table 1 Soviet and Warsaw Pact Naval Deployments¹⁹⁰

Naval Unit¹⁹¹	Northern Fleet	Black Sea Fleet	5th Eskadra¹⁹²	Baltic Fleet	East Germany	Poland	Total WP Baltic¹⁹³
SSBN	37						
SSB	2			6			6
SSN	50		6				
SSGN	30						
SSG	8	1		3			3
SS	45	30	6	30			30
CVN							
CV	1	1					
CVH							
BB							
CHG		2					
CGN	1						
CG	9	7	1	7			7
DDG	18	14	2	9			9
DD	4	10	2	4			4
FFG	8	7	1	6			6
FF	40	45	2	30	3	1	34
FA	20	35		50	59	14	123
MCM	60	90		130	46	30	206
LRMP	80						
MP							

¹⁹⁰ Sources: John Moore, *Jane's Fighting Ships 1987-1988* (London: Jane's Publishing Company Limited, 1987), IISS, *The Military Balance, 1988-1989* (London: International Institute for Strategic Studies, 1989), Simon, ed., *NATO-Warsaw Pact Force Mobilization*.

¹⁹¹ See the Glossary for definitions

¹⁹² Totals for the 5th *Eskadra* are separate from the Black Sea Fleet.

¹⁹³ Total of Soviet Baltic Sea Fleet, East Germany Navy, and Polish Navy

With an understanding of geographic Soviet naval strength one can look into the specific roles that naval units would have been utilized in based on design and mission priority. The defense of SSBN bastions, the first priority for the Soviet Navy, would primarily require the destruction of NATO SSNs as they posed the greatest threat to Soviet SSBNs. The Soviet emphasis on anti-submarine operations is clearly demonstrated in that almost every Soviet surface ship to enter service after 1966 has been classified as an antisubmarine unit.¹⁹⁴ Bastion defense would take up a significant percentage of the Soviets major surface combatants (CGN, CG, DDG, DD, & FFG) as well as Soviet SSNs and SSs.¹⁹⁵ Many of the Soviet surface ships were designed to operate in small groups in the inner anti-submarine defense zones, the bastions.¹⁹⁶ The Delta and Typhoon class SSBNs that were to be defended would have deployed into far northern waters relatively near the Kola Peninsula where they could be covered by land based patrol aircraft.¹⁹⁷ Other Soviet submarines would be deployed in defensive lines in

¹⁹⁴ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 45.

¹⁹⁵ Sherry Sontag and Christopher Drew, *Blind Man's Bluff: The Untold Story of American Submarine Espionage* (New York: Public Affairs, 1998), 245.

¹⁹⁶ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 99.

¹⁹⁷ *Ibid.*, 73-74.

the North Sea to engage NATO naval forces, especially approaching US CVBGs.¹⁹⁸

Soviet exercises in 1978, 1979, 1980, 1981, 1982, and 1985 rehearsed attacks on NATO surface ships and submarines heading north into the Barents and Norwegian Seas as a part of defending the SSBN bastions.¹⁹⁹ Overall Soviet SSBN bastion defense operations would have consumed a large percentage of the Soviet navy's resources.

The next priority for the Soviet Navy was the destruction of US CVBGs that could threaten the SSBN bastions, Soviet naval units, or the bases on the Kola Peninsula. These carriers were also seen as threatening because their aircraft could carry nuclear weapons and US plans called for these aircraft to be deployed near the Soviet Union. Soviet plans were based around attacks on US carriers but their plans could easily have been used against other NATO carriers (three British, three French, and one Italian). The Soviets sought to counter Western carriers in two different types of scenarios: continuous company and close encounter. Continuous company refers to the situation in the Eastern Mediterranean where the carriers of the US 6th Fleet were always shadowed by a Soviet ship, usually a destroyer, and would be attacked by Soviet cruise missile

¹⁹⁸ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 103.

¹⁹⁹ Miller, *The Cold War: A Military History*, 180.

submarines. These SSGNs would receive their targeting data from the shadowing ship and would launch their weapons in the very first hours of a war with NATO. The close encounter variant, which would occur in the North Atlantic and the Norwegian Sea, involved the detection of NATO carriers in the outer zone by Soviet reconnaissance aircraft and then synchronized missile attacks on these carriers by long range maritime strike aircraft and SSGNs.²⁰⁰ These attacks would seek to overload the multiple layers of defenses that a US CVBG utilized.²⁰¹ It is clear that by the 1980s the primary conventional attack force of the Soviet Navy was land based aircraft, Backfire and Badger bombers and Bear reconnaissance aircraft, and cruise missile submarines.²⁰² These aircraft would have attacked in groups of 20-30 and sought to coordinate their attacks with submarines.²⁰³ Surface ships were seen as too vulnerable to NATO attack, especially air attack, given the extensive capabilities and experience of US carrier aircraft in anti-ship operations. The Soviets practiced redeploying their Backfire and Badger maritime strike aircraft from the Pacific to the Atlantic in order to concentrate

²⁰⁰ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 91.

²⁰¹ These defenses will be described in detail below

²⁰² Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 46, Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 165.

²⁰³ Berman, *Soviet Air Power in Transition*, 20.

their efforts on a particular US CVBG and maintained extensive stocks of long range anti-ship missiles for use by these aircraft.²⁰⁴

In terms of the ground combat in Central Europe the most important mission for the Soviet Navy should have been the interdiction of NATO's North Atlantic SLOCs as NATO depended on the arrival of reinforcements and material from North America to successfully defend Western Europe. However analysts in the 1980s concluded that "there is little evidence from recent writings of the Soviets- or from observation of their recent maneuvers for that matter- to support the thesis that they plan to conduct an extensive campaign against Western sea lines of communication (SLOCs) during a major war with the United States."²⁰⁵ In fact the Soviets seemed more interested attacking NATO SLOCs not to reduce NATO's wartime reinforcement capability but in order to divert NATO ASW units. The Soviets understood that the assignment of a relatively few number of their forces to anti-SLOC missions would result in a disproportionately larger deployment of NATO ASW units to protect those SLOCs.²⁰⁶

²⁰⁴ MccGwire, *Military Objectives in Soviet Foreign Policy*, 176, Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 279.

²⁰⁵ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 75, Ford and Rosenberg, "The Naval Intelligence Underpinnings of Reagan's Maritime Strategy," 383.

²⁰⁶ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 76.

Additionally the Maritime Strategy forced the Soviets to allocate more of their resources to defending their SSBNs now that NATO planned to specifically target those units.²⁰⁷

The Soviets did not have many major naval units to use against NATO's SLOCs after they satisfied their SSBN defense and anti-carrier requirements. The Soviets only had 29 relatively quiet SSNs for use and many of these would have been used in operations not targeted on NATO SLOCs.²⁰⁸

Soviet writings and exercises demonstrate a preference for attacking European receiving ports rather than interdicting SLOCs on the high seas.²⁰⁹ Soviet long range aircraft and submarines could attack port terminals or mine ports. Around 30 Soviet submarines, mostly older models, would have been assigned to attack NATO SLOCs in addition to whatever maritime aircraft could be spared from attacking NATO carriers.²¹⁰ These older diesel submarines were not well suited for operations against SLOCs because of their need to 'snorkel' to recharge their batteries, low top speed, and their

²⁰⁷ Lyle J. Goldstein, John B. Hattendorf, and Yuri M. Zhukov, "The Cold War at Sea: An International Appraisal Introduction," *The Journal of Strategic Studies* 28, no. 2 (April 2005): 125, Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 138.

²⁰⁸ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 171-72.

²⁰⁹ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 19, 190.

²¹⁰ *Ibid.*, 111, 434.

vulnerability when recharging their batteries.²¹¹ In order to reach NATO's European ports Soviet submarines would have had to travel at least 2200 nautical miles and if they were to attack NATO convoys the distance would be greater.²¹² The point is not these submarines could not have physically completed the trip, which they could have, but that most of the water they would be traveling through would be patrolled by NATO ASW ships, submarines, and patrol aircraft. This passage in and of itself would have been extremely hazardous in wartime, and the Soviets would not have wanted to deploy large numbers of their submarines into the North Atlantic before NATO had been alerted.²¹³

Soviet operations to secure their own SLOCs and to support amphibious operations would have been carried out by the vast numbers of small frigates and fast attack craft that they deployed. These units could not take part in operations on the high seas due to design limitations but were more than sufficient to secure Soviet territorial waters and to protect coastal shipping. Amphibious operations in the Baltic would have been carried out in a series of landings as previously described, protected by land based aircraft as well as the Soviet Baltic Fleet supplemented by the national navies of East

²¹¹ Ibid., 175-76.

²¹² Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 169.

²¹³ Ibid., 179-80.

Germany and Poland. The Soviets would have sought to secure the 3 exits from the Baltic by sweeping the minefields that NATO would have deployed to cover those exits and destroying NATO maritime forces in the Baltic.²¹⁴ The Soviets had naval infantry forces stationed in the Baltic and the Kola Peninsula for use by the Baltic and Northern Fleets, respectively.

Soviet ships suffered from a number of maladies that would have limited their long term effectiveness in a naval conflict with NATO. In general Soviet naval procurement focused on “a numerical increase in the force strength of the fleet, naval aviation and coastal forces, while everything else- the system of basing, infrastructure, rear services-were left for the future.”²¹⁵ The result of this policy was the neglect of regular repairs on older ships and the resulting need for early retirement due to a lack of maintenance. The shipbuilding industry focused solely on the construction of new ships and not the upkeep of older ships. The Soviet Navy was responsible for using its

²¹⁴ Cordesman, *NATO's Central Region Forces*, 111.

²¹⁵ Kuzin and Chernyavskii, "Russian Reactions to Reagan's 'Maritime Strategy'," 438.

“generally limited and ineffective repair capabilities”²¹⁶ to conduct what maintenance operations it could. The following quote is illustrative of Soviet priorities:

“For each ruble allocated for shipbuilding, only 12 kopecks were spent on developing a system of basing.[1 ruble = 100 kopecks] In contrast, for each dollar allocated for shipbuilding in the US, three dollars were spent on developing systems of shore-based support.”²¹⁷

Soviet ship design also limited the long term effectiveness of Soviet vessels. In terms of submarines Soviet submarines were, as a rule, louder than comparable NATO submarines.²¹⁸ The primary method of detecting a submarine is by listening for the sounds that the engines make, whether nuclear or battery powered, with passive sonar equipment. A submarine’s noise level is measured not only when it is sitting still but at various speeds. As the submarine increases speed its engine plant must work harder to turn the propellers and this makes more noise. NATO’s noise cancelling technology was better than the Soviet’s and the Soviets themselves acknowledge the “relative invulnerability”²¹⁹ of NATO submarines due to this technological edge. The Soviets also had difficulty developing fire control and search radar systems that could track large

²¹⁶ Sergei Chernyavskii, "The Era of Gorshkov: Triumph and Contradictions," *The Journal of Strategic Studies* 28, no. 2 (April 2005): 286.

²¹⁷ *Ibid.*: 301.

²¹⁸ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 273.

²¹⁹ *Ibid.*, 48.

numbers of targets at one time and provide guidance to more than one missile.²²⁰ This limited the number of targets that a Soviet ship could engage at one time. While Soviet ships often looked impressive because of the large number of missile launchers on their decks, these launchers often only a few, if any, missile reloads.²²¹ On a one to one basis Soviet ships were less capable than their NATO counterparts and were designed for short, intense, individual operations.²²² Training focused on the ability to operate alone, not in task forces as was NATO's preference.²²³ This was useful for defending wide areas of the Barents Sea against NATO submarines but much less effective in facing off against groups of NATO warships.

NATO Maritime Forces

NATO's naval strength was divided among three primary commands.

SACLANT²²⁴ controlled the Atlantic and operations in the north while CINCCAN²²⁵

²²⁰ Ibid., 268, 71-72.

²²¹ Ibid., 270.

²²² Andrew Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," (Bradford, UK: School of Peace Studies, University of Bradford, 1987), 22.

²²³ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 74.

²²⁴ Supreme Allied Commander Atlantic

²²⁵ Commander in Chief Channel

oversaw the English Channel. The Mediterranean was the domain of AFSOUTH²²⁶ who ultimately reported to SACEUR. NATO's naval strength was large and varied due to the diverse nature of the navies that contributed to it. On one end of the scale the Danish and Greek navies could only defend their coastal waters and on the other end the US Navy could project power anywhere in the world in a matter of days. Many of the smaller NATO navies decided to specialize in a specific type of maritime operations while the larger US, UK, and French fleets maintained the capability to perform the full range of naval missions. The Belgians worked towards mine clearance capabilities to ensure the availability of European ports for reinforcement convoys from North America.²²⁷ France, Spain, and the Netherlands also deployed effective mine countermeasure forces, in keeping with their potential role in keeping NATO's SLOCs open.²²⁸ The West Germans and the Danes cooperated in building large numbers of fast attack craft, smaller

²²⁶ Allied Forces South

²²⁷ Cordesman, *NATO's Central Region Forces*, 184-85.

²²⁸ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 199-200.

Table 2 NATO Naval Deployments I²²⁹

Naval Unit	Belgium	Canada	Denmark	France (Atlantic)	France (Med)²³⁰	Greece	Italy
SSBN				6			
SSB							
SSN					3		
SSGN							
SSG							
SS		3	4	12	3	10	9
CVN							
CV					2		
CVH				1			2
BB							
CHG							
CGN							
CG					1		2
DDG		4		5	3		4
DD				5	4	14	
FFG	4		5			2	12
FF		8	5	11	6	2	4
FA			16			22	8
MCM	29		13	22	7	14	
LRMP		18	13		5		18
MP		18		26			

²²⁹ Sources: Moore, *Jane's Fighting Ships 1987-1988*, IISS, *The Military Balance, 1988-1989*, Simon, ed., *NATO-Warsaw Pact Force Mobilization*.

²³⁰ The French Navy was divided into the Mediterranean Fleet, based at Marseilles, and the Atlantic Fleet, based on the Brittany Coast

Table 3 NATO Naval Deployments II

Naval Unit	Netherlands	Norway	Turkey	UK	US (Atlantic) ²³¹	US (Med)	West Germany
SSBN				4	28		
SSB							
SSN				15	56	4	
SSGN					7		
SSG							
SS	5	13	16	14	1		24
CVN					3		
CV					4	1	
CVH				3			
CHG							
BB					2		
CGN					3	2	
CG					12		
DDG				13	20	2	3
DD			14		17		4
FFG	8			33	30	3	6
FF	10	5	7	2	27	2	3
FA		46	20				40
MCM	21	8	26				57
LRMP	13	7		28	170		
MP							19

²³¹ The US 2nd Fleet was responsible for the Atlantic Ocean while the US 6th Fleet was responsible for the Mediterranean Sea

submarines, and land based naval aircraft to control the Baltic. The Norwegians developed sea control abilities for use in the Norwegian Sea in conjunction with US carrier and amphibious forces.²³² Table 2 and Table 3 show the breakdown of NATO naval forces according to nationality and deployment area in some cases.

The NATO navies would have been deployed according a more national pattern than their Soviet counterparts. Aside from the US, UK, and French fleets each NATO navy would have been generally responsible for the defense of the waters surrounding their national territory. This is not to say that they would be used individually. On the contrary NATO naval units had a high degree of cooperative training and interoperability in tactical doctrine and communication.²³³ In the north NATO operations would have been centered around attacking Soviet naval units in the Norwegian and Barents Seas, ensuring the reinforcement of Norway by NATO ground forces transported by sea, preventing Soviet submarines from entering the North Atlantic, and striking Soviet bases on the Kola Peninsula as a part of the Maritime Strategy. Early on in a conflict, US and NATO SSNs would have penetrated the Barents

²³² Geoffrey Till, "Holding the Bridge in Troubled Times: The Cold War and the Navies of Europe," *The Journal of Strategic Studies* 28, no. 2 (April 2005): 330.

²³³ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 198.

Sea to attack Soviet SSBN bastions.²³⁴ In the 1980s concern was expressed that these offensive submarine operations might have escalated a conventional conflict to the strategic nuclear level. This does not seem likely at all given the large size of the Soviet SSBN force and the limited number of SSBN warheads needed to make a dramatic impact in a counter-value strike.²³⁵ Even if NATO SSNs and ASW forces could have successfully targeted several Soviet SSBNs they would require months to hunt down enough of these ships in order to prevent the Soviets from attacking NATO cities with their SLBMs.²³⁶ European navies generally envisioned their navies chipping away at the Northern Fleet until US CVBGs passed through the GIUK Gap to commence large scale offensive operations.²³⁷ NATO reinforcements earmarked for Norway such as the ACE Mobile Force, the CAST, and the US MAB would need to be escorted through the North and Norwegian Seas with surface combatants and covered by land based patrol and strike aircraft. In addition NATO rehearsed amphibious operations with US, UK, and

²³⁴ *National Security Strategy*, 908.

²³⁵ John K. Setear, "A Political-Military Game of Protracted Conventional War in Europe," (Santa Monica, CA: RAND Corporation, 1990), 13.

²³⁶ Submarine Launched Ballistic Missile (SLBM): a long range nuclear missile launched from an SSBN

²³⁷ Till, "Holding the Bridge in Troubled Times: The Cold War and the Navies of Europe," 330.

Dutch marines in northern Norway to turn the flank of a Soviet land advance south into Norway.²³⁸

While all of NATO's ships were not deployed at sea at all times, they regularly practiced 'surging' to sea in a crisis situation. For example around a third of the US fleet was at sea at any given time but the bulk of the remainder could be available for duty in short order.²³⁹ The US had 60 SSNs tasked for operations in the Atlantic and the Mediterranean and 80% of them would have been available for immediate deployment on the day that a mobilization order was announced.²⁴⁰ Given the assumption of 10 days mobilization time the vast majority of NATO naval forces would be available for operations. This issue of 'surging' is particularly important in considering the scope and nature of US CVBG operations in a conflict. The US 2nd Fleet trained for operations involving 2 Battle Forces with 2 aircraft carriers in each Battle Force in addition to roughly 6 escorts per carrier.²⁴¹ In addition a battleship Surface Action Group (SAG)²⁴²

²³⁸ Ibid.: 333-34.

²³⁹ *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 1103.

²⁴⁰ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 142.

²⁴¹ John M Collins, *US Soviet Military Balance 1980-1985* (Washington, DC: Congressional Research Service, 1986).

²⁴² A group of surface ships centered around a battleship

and 3 Underway Replenishment Groups (URGs)²⁴³ would have been deployed to the North Atlantic.²⁴⁴ By the time combat started on M+14 the US would have had almost completed moving these forces into the North Atlantic where they would be ready to penetrate the GIUK Gap. Each US carrier held a powerful striking force of tactical aircraft totaling 80-90 planes per carrier.²⁴⁵ As these carriers moved in to secure the Norwegian Sea NATO SSNs would have worked to ‘sanitize’ the ocean directly in the carrier’s line of passage and would have launched cruise missile strikes on Soviet bases on the Kola Peninsula.²⁴⁶ Overall the US would have been able to deploy and operate its carriers in this scenario in a manner consistent with its training and doctrine; that is as a united striking force supported by NATO maritime forces.

Given that as these carriers moved into the Norwegian Sea they would have come under Soviet missile attack primarily from cruise missiles and maritime attack aircraft it is worth examining the capabilities of a US CVBG in defending against such

²⁴³ A collection of tankers and supply ships that would refuel and rearm groups of warships in order to allow them to remain at sea for longer periods of time

²⁴⁴ *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 991.

²⁴⁵ Cordesman, *NATO's Central Region Forces*, 248.

²⁴⁶ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 148.

an attack. A battle group was defended by a series of layers of firepower that would be applied to incoming missiles and aircraft.²⁴⁷ Furthest out F-14 Tomcat fighters would use their long range Phoenix missiles to engage threats detected by the battle group's radar and the E-2C Hawkeye radar surveillance planes. They would be backed up by F/A-18 Hornet fighters with Sea Sparrow missiles, long range Standard Surface to Air Missiles (SAMs) fired by the battle group's escorts, short range Sea Sparrow SAMs, and finally short range automated Phalanx Gatling guns. This layering of different platforms with different capabilities ensured that US forces would be given several opportunities to 'knock down' incoming Soviet missiles. Even with all this defensive firepower it is possible that in a synchronized attack a small number of Soviet missiles would have gotten past the battle group's defenses. It was often assumed that one or two cruise missile hits would put a carrier out of action. However the US Navy's historical experience does not support this perspective. On three separate instances since World War II a major explosion has occurred on a US aircraft carrier but the carrier has been able to resume flight operations within hours of the attack if needed. In one of these explosions, on the USS *Forrestal* on July 29, 1967 off South Vietnam, "nine large

²⁴⁷ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 267.

bombs explode on the flight deck, the equivalent of a half dozen conventionally-armed cruise missiles.”²⁴⁸ The physical size of a US aircraft carrier as well as its large crew would have made it very difficult to put such a platform out of action. “Advances in damage control, area air defense, sustainability, and maneuverability- the latter two attributes conferred by nuclear propulsion- render the modern attack carrier of the of the two most survivable surface men-o’-war presently afloat [The other being the US *Iowa* class battleships].”²⁴⁹ It seems that US carrier battle groups would have been able to hold their own against Soviet attacks in the Norwegian Sea, inflicting severe damage on Soviet naval forces in the area.²⁵⁰ In any case the deployment of NATO naval units on offensive operations would have served to keep Soviet fleet units defending their SSBN bastions and not attacking NATO SLOCs.²⁵¹

In terms of the ground war in Central Europe the most important NATO naval operation was the protection of SLOCs from North America to European ports. It was through these ports that critical US reinforcements would pass as they were transported

²⁴⁸ Francis J West et al., *Naval Forces and Western Security* (Washington, DC: Pergamon-Brassey's International Defense Publishers, 1987), 17.

²⁴⁹ *Ibid.*, 18.

²⁵⁰ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 401.

²⁵¹ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*.

to West Germany. We will later assess the ability of the US specifically to prepare combat formations in the US for transport to Europe and the specific size and type of these reinforcements. For now it is sufficient to examine the ability of NATO's naval forces to protect these formations as they were shipped across the Atlantic. Ultimately both capabilities are necessary in order for reinforcement to occur. On any given month 1500 ships unload their cargoes in European ports just to keep pace with normal peacetime economic activity.²⁵² A total of 325 shiploads per month would have been needed to transport all of NATO's initial reinforcements and supplies.²⁵³ The first inherent difficulty for the Soviets was to differentiate between the ships carrying NATO military cargoes and the ships carrying civilian cargoes. While the Soviet task would have been simplified by the fact that NATO military cargo bearing ships would have travelled in defended convoys there would have been a large amount of background traffic passing through the North Atlantic at the same time. Only ships carrying military cargo would have been organized into convoys.²⁵⁴ NATO planning called for convoys made

²⁵² Ibid., 162.

²⁵³ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 162-63.

²⁵⁴ Ibid., 347.

up of 60 transport ships and 7-8 escorts sailing at 15 knots.²⁵⁵ These convoys would have been protected continuously by maritime patrol aircraft operating from based in North America, Bermuda, Iceland, the Azores, and the UK during their crossing. As a historical comparison in World War II only 1% of Allied shipping losses occurred in convoys that had surface and air escorts.²⁵⁶ These mobile escorts would have been supplemented by constant patrols in the waters surrounding ports in the US and Europe to counter Soviet mines and submarines.²⁵⁷ “Given the very large throughput capacities of NATO ports demonstrated in peacetime and the relatively small amount of military cargo that had to be delivered the Soviet port destruction campaign would have to have been very effective to stop NATO’s reinforcements.”²⁵⁸ Additionally NATO would have roughly 215 million tons of shipping to call on at the start of a conflict.²⁵⁹ These vast reservoirs of shipping meant that the Soviets would not be able significantly affect NATO’s overall carrying capacity. All in all NATO was is in a good position to provide a secure crossing for reinforcements coming from the US.

²⁵⁵ Ibid., 346.

²⁵⁶ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 177.

²⁵⁷ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 141.

²⁵⁸ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 173.

²⁵⁹ Ibid., 176.

An important NATO asset in countering Soviet submarines in the North Atlantic and Norwegian Seas was the Sound Surveillance System (SOSUS), a series of passive sonar arrays deployed to allow NATO to locate Soviet submarines at long range. SOSUS provided worldwide coverage and was able to localize the position of a Soviet submarine to within 10km from hundreds of miles away.²⁶⁰ One series of SOSUS arrays was deployed between Bear Island and Norway and another along the GIUK Gap.²⁶¹ Additionally in the 1980s the US Navy constructed several small SURTASS²⁶² ships that would have provided SOSUS-like coverage for the mid-ocean areas where SOSUS coverage did not extend.²⁶³ Between SOSUS and SURTASS NATO would have had a rather accurate picture of Soviet submarine activity and been able to focus the efforts of its ASW forces.

²⁶⁰ A.B. Baggeroer, "Sonar Arrays and Array Processing," (Cambridge, MA: Massachusetts Institute of Technology, 2005), 8.

²⁶¹ Joel S Wit, "Advances in Submarine Warfare," *Scientific American* 244, no. 2 (February 1981): 32, 36-37.

²⁶² Surveillance Towed Array Sensor System: ships equipped with extensive long range passive sonar equipment

²⁶³ Ford and Rosenberg, "The Naval Intelligence Underpinnings of Reagan's Maritime Strategy," 398.

Conclusion

When reaching conclusions regarding naval operations in a NATO-Warsaw Pact conflict in the summer of 1987 the important thing to keep in mind is the impact that these operations would have had on the land battle in Central Europe. One side or the other could win complete command of the sea but if their land forces were defeated then this victory would seem rather hollow. Given the balance of naval forces in the Baltic each side would have inflicted serious losses on the other in that area. However NATO does not seem to have the ability interdict Soviet amphibious operations against Denmark given the short distance that these forces would have to cover. NATO also does not seem to have had the forces or doctrine necessary to successfully challenge Soviet control of their territorial waters. The offensive action of NATO CVBGs and SSNs against Soviet naval units in the Norwegian Sea outer defense area and Soviet SSBN bastions in the Barents Sea is a fascinating and intricate topic. However the result of these attacks is less important than the fact that this operation would have kept more Soviet maritime power focused on destroying NATO's carriers than attacking NATO's SLOCs. It seems clear that NATO would have been largely successful in destroying

Soviet surface vessels within its aerial and undersea striking reach early in a conflict.²⁶⁴

This would have been the case in part due to NATO's numerical superiority in terms of major warships and the design limitations of Soviet vessels. Larger percentage of the year deployed at sea. Attacks on Soviet SSBN bastions after the initial days of a conflict would have resulted in serious losses on both sides. However given the diversion of Soviet maritime power due to the priority of SSBN defense and the need to counter offensive efforts by NATO carriers and submarines it seems that only a relatively small number of older Soviet submarines would have been deployed against NATO Atlantic SLOCs. Given the historical experience of convoys defended with air and surface units, the numerical and qualitative balance of forces deployed to attack and protect NATO's reinforcement convoys, and the US Navy's capability for locating Soviet submarines on the high seas it seems that NATO's sealift of reinforcements would have been largely successful. While there certainly would have been losses it seems that in general the transport of combat formations and supplies from primarily US Gulf Coast Ports to

²⁶⁴ *National Security Strategy*, 872, Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 401, Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 54, Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 180, Organization, *The North Atlantic Treaty Organization: Facts and Figures*, 213, Joint Chiefs of Staff US, "1989 Joint Military Net Assessment," (Washington, DC: Department of Defense, 1989), 5-15.

receiving ports in France, Belgium, and the Netherlands would not have been significantly affected by Soviet maritime forces.

Table 4 shows the comparative balance of naval forces available to each side in specific areas of operation. Additionally NATO ships were often more technically advanced in terms of the equipment they carried and spent a larger percentage of the year deployed at sea.²⁶⁵ Attacks on Soviet SSBN bastions after the initial days of a conflict would have resulted in serious losses on both sides. However given the diversion of Soviet maritime power due to the priority of SSBN defense and the need to counter offensive efforts by NATO carriers and submarines it seems that only a relatively small number of older Soviet submarines would have been deployed against NATO Atlantic SLOCs.²⁶⁶ Given the historical experience of convoys defended with air and surface units, the numerical and qualitative balance of forces deployed to attack and protect NATO's reinforcement convoys, and the US Navy's capability for locating Soviet submarines on the high seas it seems that NATO's sealift of reinforcements would have been largely successful. While

²⁶⁵ Nitze and Sullivan, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, 347.

²⁶⁶ *Ibid.*, 111.

there certainly would have been losses it seems that in general the transport of combat formations and supplies from primarily US Gulf Coast Ports²⁶⁷ to receiving ports in France, Belgium, and the Netherlands would not have been significantly affected by Soviet maritime forces.

Table 4 Comparative Naval Strength

Naval Unit	North Atlantic NATO²⁶⁸	North Atlantic WP	Baltic Sea NATO²⁶⁹	Baltic Sea WP	Mediterranean Sea NATO²⁷⁰	Mediterranean Sea WP²⁷¹
SSBN	38	37				
SSB		2		6		
SSN	71	50			7	6/6
SSGN	7	30				
SSG		8		3		0/1
SS	43	45	33	30	38	6/36
CVN	3					
CV	4	1			3	0/1
CVH	4				2	
CHG						0/2
BB	2					

²⁶⁷ West et al., *Naval Forces and Western Security*, 26.

²⁶⁸ Canada, French Atlantic Fleet, Norway, UK, and US Atlantic Fleet

²⁶⁹ Belgium, Denmark, Netherlands, and West Germany

²⁷⁰ French Mediterranean Fleet, Greece, Italy, Turkey, and US Mediterranean Fleet

²⁷¹ Number before slash indicates totals for 5th *Eskadra* only, number after slash indicates 5th *Eskadra* plus Soviet Black Sea Fleet

CGN	3	1			2	
CG	12	9		7	3	1/8
DDG	42	18	3	9	9	2/16
DD	22	4	4	4	32	2/12
FFG	63	8	27	6	17	1/8
FF	53	40	18	34	21	2/47
FA	46	20	56	123	50	0/35
MCM	30	60	120	206	47	0/90
LRMP	223	80	26		23	
MP	44		19			

CHAPTER 8

THE WAR IN THE AIR

In terms of conventional operations perhaps the most dramatic change in warfare in the 20th century was the role of airpower. Aircraft and weapons developed by leaps and bounds throughout the century, providing ever greater capabilities at every greater cost. By the 1980s NATO and the Warsaw Pact both had large numbers of high performance aircraft as well as a wide variety of support planes and bases in place in Europe. In a conflict between the two alliance systems the outcome of aerial operations would have had a significant influence on the course of the ground campaign. In order to determine the most probable outcome of the war in the air the organization, doctrine, strength, and quality of each alliance's aerial forces will be examined as well as the effect of weather.

Organization

The Warsaw Pact's air forces were divided along national and geographic lines. The Eastern European air forces were all based on their own territory and would have

reported directly to Soviet commanders in wartime. The Soviet Air Force was in reality two different organizations, the Air Force (VVS) and Air Defense Troops (PVO). The VVS was responsible for the standard air force missions while PVO, the premier armed air force,²⁷² concerned itself with strategic air defense. The Air Force was divided into Long-Range Aviation Command, Frontal Aviation Command, Military Transport Command, and Reserve and Cadre Training Command. Frontal Aviation held most of the tactical aircraft and would have been the primary combatant in a conflict with NATO. Aircraft from Frontal Aviation were assigned to Air Armies in the USSR and Groups of Soviet Forces in Eastern Europe. A regiment was considered the basic building block and each of these included three squadrons of aircraft, with 12-18 aircraft per squadron. Three regiments composed a division and two or more division made up an Air Army. The Soviet Frontal Aviation aircraft in Eastern Europe were the under direct control of Air Force High Command. Eastern European air defense aircraft were linked in with the Soviet PVO air defense systems under the direct control of Moscow. Airpower has historically been best utilized when operating under a centralized

²⁷² Berman, *Soviet Air Power in Transition*, 15.

command and control system and here the Soviets would have benefited from the centralization inherent in their governmental structure.

NATO's air forces along the Central Front were divided into two units, the 2nd Allied Tactical Air Force and the 4th Allied Tactical Air Force, referred to as 2 ATAF and 4 ATAF. 2 ATAF contained Belgian, British, Dutch, German, and US units supporting NORTHAG while 4 ATAF had Canadian, German, and US units supporting CENTAG.²⁷³ These two air forces were under the command of Commander Allied Air Forces Central Europe (COMAAFCE) who reported to SACEUR. NATO had developed an integrated air defense system called the NATO Air Defense Ground Environment (NAGDE) comprising ground based search radars, SAM²⁷⁴ sites, interceptor aircraft, airborne radars and command posts, and communication systems to link the various elements. The basic NATO building block for aerial units was the squadron with 12-18 aircraft. Squadrons were sometimes grouped into wings with 3-4 squadrons. The air defense of France and the United Kingdom remained national affairs although these command structures were fully integrated into NAGDE.²⁷⁵

²⁷³ Miller, *The Cold War: A Military History*, 297.

²⁷⁴ Surface to Air Missile

²⁷⁵ Miller, *The Cold War: A Military History*, 30.

Doctrine and Tactics

In a war with NATO situation, Soviet doctrine was centered around three priorities: protecting the USSR from air attack, conventional or nuclear, targeting NATO's nuclear systems, and supporting the ground offensive. Overall Soviet military policy called for the waging of conventional war while retaining a capability to fight a nuclear conflict. For PVO air defense forces this meant the defense of "ammunition dumps, nuclear storage sites, petroleum stocks, air bases, strategic early warning radars, and...some intermediate and long range nuclear offensive forces"²⁷⁶ located in the western USSR. Given that the primary role of the PVO was to defend against the US strategic bomber force in a nuclear attack setting, the Soviets would have sought to preserve this defensive capability. The best way to preserve the integrity of their strategic defense was to withhold those aircraft from participation in operations against NATO.²⁷⁷ Furthermore the aircraft assigned to strategic air defense were designed for

²⁷⁶ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 37.

²⁷⁷ Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," 53, Anthony H Cordesman, "The NATO Central Front and the Balance of Uncertainty," *Armed Forces Journal International* 120 (July 1983): 22.

interception at high altitudes, not aerial combat.²⁷⁸ This would have been similar to the US policy of keeping some Air National Guard squadrons in the US for continental air defense. However the difference lies in the fact that PVO was a much larger force than US air defense forces. The result of the Soviet fixation on waging conventional combat with one eye always turned to the potential for nuclear war was that a large number of Soviet fighter aircraft would not have been deployed against NATO.

Frontal Aviation's first objective was the elimination of NATO's theater nuclear weapons, whether based on missiles or aircraft.²⁷⁹ The support of Warsaw Pact ground forces was a secondary mission, a fact recognized by the Soviets: "Neutralization of enemy weapon-carrying aircraft and missiles will constitute the main task, which will require a large number of aircraft. Therefore only limited air power can be assigned to support ground operations."²⁸⁰ The elimination of NATO's theater nuclear capability would be accomplished by focusing a high percentage of Frontal Aviation's assets on those targets until they were destroyed. Frontal Aviation would have sought to create

²⁷⁸ Berman, *Soviet Air Power in Transition*, 52.

²⁷⁹ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 39, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 6.

²⁸⁰ Douglass and Hoerber, *Conventional War and Escalation: The Soviet View*, 30. Quote from Colonel Brykkanov

'safe' corridors through NATO's air defenses by suppressing air defense systems in order to allow strike aircraft to reach their targets. Priority would be given to nuclear weapons, storage sites, nuclear command and control structures, communication systems, and airfields holding nuclear capable aircraft.²⁸¹ After these targets, especially the nuclear weapons and their storage sites had been destroyed then Frontal Aviation would have focused on supporting Warsaw Pact ground forces. However it seems that Frontal Aviation would have used up a large percentage of its aircraft and pilots during its offensive against NATO's nuclear systems.²⁸² This would have hindered its ability to provide support for friendly ground units. Frontal Aviation's focus on NATO's nuclear capability early in a conflict is another example of the Soviet insistence on preparation for nuclear combat negatively affecting conventional operations.

NATO's air forces did not suffer from the challenge of misguided assignment of its resources. NATO's priorities were Battlefield Air Interdiction (BAI)²⁸³, offensive

²⁸¹ Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 5-6, Miller, *The Cold War: A Military History*, 314.

²⁸² Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 44, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 11, 178-80, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 117.

²⁸³ BAI involved the disruption and destruction of enemy units near the forward edge of battle

counter-air operations, air defense, and deep interdiction. However 2 ATAF and 4 ATAF took different approaches to the manner in which BAI was to be accomplished. 4 ATAF reflected US Air Force doctrine which called for attacks from medium to high altitude with large numbers of tanker, command and control, electronic warfare, SEAD²⁸⁴, and interceptor aircraft in support of the strike aircraft.²⁸⁵ 2 ATAF was grounded more in European tactics which preferred the use of small packages of 2-4 strike aircraft at very high speed at very low altitude in order to take advantage of radar ground clutter and terrain contours to mask their approach.²⁸⁶ 4 ATAF sought to apply massive firepower to targets near the front line clearly identified by higher headquarters and saw itself as “CINCENT’s central, strategic reserve to be shifted from sector to sector with great flexibility”²⁸⁷ The US Air Force wanted to spend as little time as possible in the Warsaw Pact air defense grid and sought to physically and electronically suppress these air defenses.²⁸⁸ European thinking wanted to attack targets of opportunity set 10-15

²⁸⁴ Suppression of Enemy Air Defenses, also known as “Wild Weasel” aircraft

²⁸⁵ Dinter and Griffith, *Not Over by Christmas: NATO's Central Front in World War III*, 59.

²⁸⁶ Rudolf F Peksens, "NATO Offensive Air Power in the Central Region: TWOATAF and FOURATAF Contrasted," (Washington, DC: National War College, 1986), 12-13.

²⁸⁷ *Ibid.*, 15.

²⁸⁸ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 55.

kilometers back from the front line as identified by the strike leader. US Air Force tactics were possible because of the greater American support assets. This is not to say that the two air forces would have operated with totally different methods. European aircrews were trained to operate with US aerial task forces and US strike aircraft regularly practiced attacks at low altitude along the European model. NATO had the technology to satisfy both styles of aerial warfare in all weather situations.²⁸⁹

By the late 1980s NATO had developed two different types of aircraft that would have aided its efforts in the air war. In 1986 NATO's 18 E-3 Sentry AWACS²⁹⁰ aircraft became operational in a multi-national squadron.²⁹¹ These units had large airborne radars that provided greatly increased coverage and detection ranges while having the capability to coordinate the efforts of large numbers of aircraft. In a conflict situation 3 of these aircraft would have been airborne at each time guiding and coordinating the efforts of the hundreds of NATO tactical aircraft operating at any given time.

Historically AWACS aircraft have improved the efficiency and harmonization of aerial

²⁸⁹ Cordesman, "The NATO Central Front and the Balance of Uncertainty," 54.

²⁹⁰ Airborne Warning and Control System

²⁹¹ Organization, *The North Atlantic Treaty Organization: Facts and Figures*, 293, Miller, *The Cold War: A Military History*, 296.

efforts and it seems likely that NATO would have benefited significantly from these aircraft. In another vein in 1980 the US Strategic Command began to develop plans and procedures to use strategic heavy bombers in support of regional combat situations.²⁹² This involved giving around 75 B-52 aircraft the capability to use precision guided munitions such as smart bombs and ALCMs.²⁹³ Additionally B-52s were given the ability to drop large numbers of unguided munitions with great precision in any weather conditions.²⁹⁴ The long range cruise missiles could have targeted airfields and key transportation targets in Eastern Europe.²⁹⁵ Additionally the B-52s would have provided NATO the capability to rapidly inflict massive damage on specific Warsaw Pact formations through carpet bombing. The addition of these two large aircraft to NATO's operational planning in the 1980s would have added to NATO's ability to coordinate large numbers of aircraft and to deliver massive firepower on Pact ground units.

²⁹² Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 130.

²⁹³ Edgar Ulsamer, "Bombers for the Battlefield," *Air Force Magazine* January 1987, 20-21, Miller, *The Cold War: A Military History*, 131. *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 1279. ALCM: Air Launched Cruise Missile, a long range, stand off precision missile

²⁹⁴ General Bennie Davis, "Indivisible Airpower," *Air Force Magazine* March 1984, 50, Ulsamer, "Bombers for the Battlefield," 21.

²⁹⁵ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 45-46.

Weather

The weather in Central Europe in the summers was generally conducive to air operations. The worst weather occurred in the winter although fog occasionally limited visibility in the mornings. The winds generally blew from east to west and rainstorms, generally closer to the coast, would have sometimes grounded certain types of aircraft on both sides. Table 5 shows the general visibility conditions in Europe and Germany from April to September.

Table 5 Summer Weather in Germany²⁹⁶

Ceiling/Visibility²⁹⁷	Percentages of Days in Europe	Percentage of Days in Germany
Under 1000 feet / Under 3 miles	10	10
Around 1000 feet / Around 3 miles	16	16
Over 1000 feet / Over 3 miles	74	74

²⁹⁶ Berman, *Soviet Air Power in Transition*.

²⁹⁷ The ceiling is the distance that one can see vertically from the ground. Visibility is the distance that one can see horizontally

Table 5 shows that weather would not have hindered aerial operations in the summer months. NATO generally had a higher percentage of aircraft that were capable of operating in all weather conditions. Therefore NATO would have gained a small advantage in aerial operations due to the weather but not a significant one.

Numerical Strength

While it is a common adage that victory does not always go to the side with larger forces, having more forces certainly does help. An examination of the numbers and type of aircraft as well as airfields and air defenses that NATO and the Warsaw Pact would have been able to utilize will aid in the analysis of the air war. In a conflict situation both the US and the USSR would have reinforced their forces in Central Europe with aircraft from their national territories. US plans called for the transfer of around 75 squadrons, roughly 1500 aircraft from the continental US to Europe.²⁹⁸ The US would have withheld 14 squadrons of interceptors for strategic air defense.²⁹⁹ The ability of the US to bring in these additional aircraft will be discussed later.

²⁹⁸ Cordesman, *NATO's Central Region Forces*, 246, *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 1295.

²⁹⁹ *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 1309.

Table 6 NATO Aerial Strength³⁰⁰

Nation	Fighter³⁰¹	Fighter/ Bomber	Attack³⁰²	Strike³⁰³	AWACS³⁰⁴	Bomber
Belgium		7/144				
Canada		3/54				
Denmark		4/66				
France	13/220	10/206				
Netherlands	1/18	7/128				
UK	2/48	8/162		7/148		
US	13/312	49/1080	26/504	11/260		4/80
West Germany	4/72	10/225		8/144		
Total NATO	33/670	98/2052	26/504	26/552	1/18	4/80

Table 6 shows the strength of NATO's aerial forces in the Central Region after being reinforced by additional US aircraft. Table 7 shows the numbers and type of Warsaw Pact aerial forces that would be available after 14 days of Pact mobilization.

³⁰⁰ Cordesman, *NATO's Central Region Forces*, 77,102,25-27,52,83-84,93-95,213-14,40-41, Miller, *The Cold War: A Military History*, 30, Phil Williams, "British NATO Policy: The Next Five Years," (Santa Monica, CA: RAND Corporation, 1990), 10, Philip Boshier, "NATO Combat Air Units," <http://orbat.com/site/history/index.html>, IISS, *The Military Balance, 1988-1989*.

³⁰¹ A/B, A=Number of squadrons, B=Number of aircraft

³⁰² Short range tactical attack aircraft

³⁰³ Long range, deep penetration, all weather strike aircraft

³⁰⁴ Airborne Warning and Control System

Table 7 Warsaw Pact Aerial Strength³⁰⁵

Nation	Fighter³⁰⁶	Fighter/ Bomber	Bomber
Czechoslovakia	18/270	12/170	
East Germany	18/270	6/60	
Hungary	9/135		
Poland	33/400	18/225	
Soviet Union	78/1170	60/900	27/408
Total Warsaw Pact	156/2245	96/1355	27/408

These tables show that the Warsaw Pact head a clear lead in fighter aircraft which would have significantly aided their defensive efforts against NATO ground attack and strike aircraft. On the other NATO had a very large number of multi-role aircraft which gave the Alliance flexibility in determining its aerial tasking emphasis. The Warsaw Pact had a slight advantage in overall numbers but had less of a ‘swing’ capability between air defense and attack. NATO’s air defense aircraft would have been kept busy between the Pact’s large numbers of bombers and fighter-bombers. In terms of airfields and bases for

³⁰⁵ IISS, *The Military Balance, 1988-1989*, Miller, *The Cold War: A Military History*, 314.

³⁰⁶ A/B, A=Number of squadrons, B=Number of aircraft

these massive numbers of aircraft NATO and the Warsaw Pact had roughly similar strengths, 220 airfields and 245 airfields respectively.³⁰⁷ Given the large number of airfields available for both sides basing would not have been a major problem for either side. The Warsaw Pact had an advantage in terms of numbers of air defense systems, having around 2000 SAM launchers as compared to NATO's 1500.³⁰⁸ Warsaw Pact commanders understood that their air defense systems were not as technologically advanced as NATO's so they deployed them in redundant overlapping patterns, as shown in Figure 3. NATO did make technological improvements in their air defense weaponry, radars, and communication systems during the 1980s.³⁰⁹ On the whole it does not seem that the outcome of aerial combat between the NATO and the Warsaw Pact would have been drastically affected by the numerical balance. Both sides had roughly

³⁰⁷ Organization, *The North Atlantic Treaty Organization: Facts and Figures*, 249, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 198-99, Cordesman, *NATO's Central Region Forces*, 76,158, Berman, *Soviet Air Power in Transition*, 41-42, Cordesman, "The NATO Central Front and the Balance of Uncertainty," 53.

³⁰⁸ Cordesman, *NATO's Central Region Forces*, 24, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 192, IISS, *The Military Balance, 1988-1989*.

³⁰⁹ Cordesman, *NATO's Central Region Forces*, 160, Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 53.

equal numbers of aircraft and airfields. The Pact held an advantage in number of air defense systems but NATO's were more sophisticated.

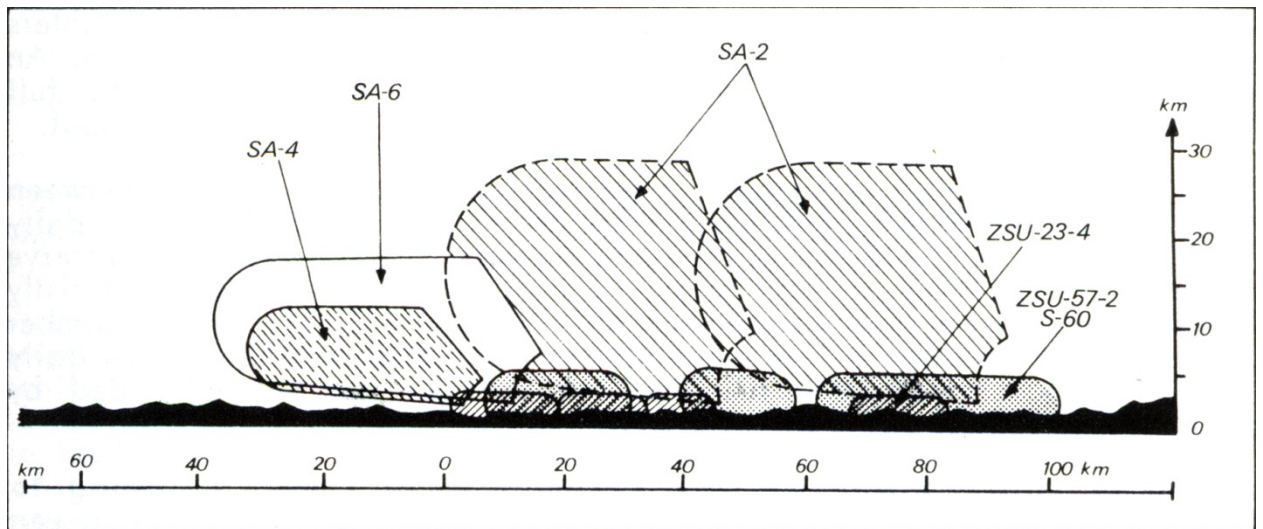


Figure 3 Soviet Air Defenses³¹⁰

Quality

In aerial combat qualitative factors are often more important than the quantitative balance. Historically qualitative factors have given Western air forces rather high kill

³¹⁰ Friedrich Wiener, *The Armies of the Warsaw Pact Nations: Organization, Concept of War, Weapons, and Equipment* (Vienna, Austria: Carl Ueberreuter Publishers, 1981), 157.

ratios.³¹¹ NATO's aircraft were on average 8-10 years more advanced than Soviet aircraft and 13-15 years more advanced than Eastern European aircraft.³¹² Perhaps the most clear example of NATO's technological edge was the development and deployment of the F-117 Nighthawk, a stealth strike aircraft, by the US Air Force in 1981. The average NATO fighter-bomber had 3-5 times the payload carrying capacity of the average Warsaw Pact fighter-bomber and could carry that payload at longer ranges.³¹³ Additionally NATO's pilots went through more extensive and more realistic training than Pact pilots.³¹⁴ While NATO pilots were trained to show initiative, Pact pilots were "dependent on ground-based command systems virtually throughout their entire flight."³¹⁵ This limited the ability of Pact pilots to respond to unexpected

³¹¹ *Alliance and Defense Capabilities in Europe*, 216, Berman, *Soviet Air Power in Transition*, 75.

³¹² Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 53, Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 5.

³¹³ Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 123, Berman, *Soviet Air Power in Transition*, 55, Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," 53, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 43,59.

³¹⁴ Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 53, Berman, *Soviet Air Power in Transition*, 57-58, Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 5, *Alliance and Defense Capabilities in Europe*, 233.

³¹⁵ Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 304.

situations. NATO's challenge lay in a shortage of these highly trained pilots.³¹⁶ NATO's maintenance units were trained and equipped to get damaged aircraft back into action quickly by performing repair work at the local airfield level or an intermediate repair airbase located nearby.³¹⁷ Since forward maintenance personnel at Warsaw Pact airfields often suffered from shortages in replacement parts and equipment, damaged aircraft had to be sent back to rear area depots.³¹⁸ This would have kept these aircraft out of action for long periods of time. All of these factors would have given NATO a qualitative edge in aerial operations.

Conclusion

NATO's doctrine and tactics were clearly designed to make the maximum contribution to the ground campaign and to respond quickly to local commander's requests for air support. The Warsaw Pact suffered from a doctrine that called for the targeting of NATO's nuclear capabilities at the outset of a conflict. This would have tied up Pact aerial resources in operations that would not have materially affected ground operations and would have limited the Pact's aerial resources when attention was finally

³¹⁶ Cordesman, *NATO's Central Region Forces*, 125.

³¹⁷ Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 23,32-33.

³¹⁸ *Ibid.*, 24.

given to supporting Pact ground troops. Additionally the desire to preserve the Soviet air defense forces would have hindered the effectiveness of the Pact's air defense efforts.

The weather of Central Europe and the numerical balance would have given neither side a clear advantage although NATO's qualitative edge would certainly have helped the Alliance. All in all it seems that NATO's air forces would have been able to disrupt and delay the Warsaw Pact offensive to a greater degree than the Warsaw Pact's air power would have been able to hinder NATO's defensive efforts.

CHAPTER 9

MOBILIZATION AND REINFORCEMENTS

NATO and the Warsaw Pact both maintained a significant number of their combat forces outside of Central Europe and planned to reinforce their units in Central Europe with these forces through mobilization and reinforcement. The transformation of a nation from a peacetime to a wartime setting is called mobilization and usually requires a decision by the national government or chief of state. Mobilization includes, but is not limited to the preparation of civilian transport systems (road, rail, and air) for military use, the calling up of reserve units, the increase in production of military supplies and equipment, and the deployment of reinforcements to a crisis area.³¹⁹ Reinforcement capabilities are not just measured in terms of numbers of ships and aircraft available to move military units but are affected by the logistical infrastructure (ports, roads, rail line, and airfields), the military command and control systems, and the

³¹⁹ Miller, *The Cold War: A Military History*, 323.

readiness of the units and platforms involved.³²⁰ In analyzing the affect that mobilization and reinforcement capabilities would have on combat operations in Europe several different factors must be examined. The time that each nation would have to accomplish its mobilization and reinforcement objectives needs to be defined. The plans of each alliance system for reinforcement should be understood so that an investigation of capabilities can determine the ability of each alliance to complete its reinforcement goals. It is typical of military organizations, given their generally conservative nature, to overestimate the capabilities of their enemy and to underestimate their own.³²¹ While this is useful in convincing national legislatures or leaders to increase the military's percentage of the national budget it is not as helpful in determining the exact resources available to each side. An excellent analysis of this type of thinking can be found in Appendix 3 in one of Churchill's letters written during the Second World War.

³²⁰ LTC Dennis G Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," (Fort Leavenworth, Kansas: US Army Command and General Staff College, 1990), 27.

³²¹ Alain C Enthoven and K Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005), 152.

Warning Time

The most important issue for the success of mobilization and reinforcement on either side was the time available for these processes to occur. Since the Warsaw Pact would have initiated combat operations in this scenario the first issue is the time that Pact forces would have taken to mobilize. Some defense analysts in the 1980s held that the Pact would begin an assault on NATO with little or no preparation, moving directly from an exercise into the attack. However the pattern of Soviet operations throughout the Cold War as well as the relative balance of forces strongly suggests that the Soviets would take weeks or months to prepare for an attack on NATO.³²² Soviet forces took several weeks to mobilize before beginning operations in Hungary (1956), Czechoslovakia (1968), Afghanistan (1979), and Poland (1980).³²³ Additionally the greatest Soviet advantage in terms of ground forces in Central Europe relative to NATO would have occurred after about 14 days of mobilization, assuming that NATO does not

³²² Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 117, "Trends and Developments in Warsaw Pact Theater Forces and Doctrine through the 1990s," (Central Intelligence Agency, 1989), 6, Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 47.

³²³ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 22.

begin to mobilize until several days after the Soviets start.³²⁴ The improvements in NATO's capabilities and readiness in the 1980s would have made a 'standing start' attack much more risky than an attack preceded by a period of mobilization.³²⁵ After a month of mobilization NATO would have rough parity with the Warsaw Pact³²⁶ and so it seems clear that the Pact would have attacked before this point. The Soviet operational plan has been examined in detail previously but it is sufficient to say that the plan would have necessitated 2-3 weeks of mobilization prior to the start of combat operations.³²⁷ This scenario will proceed on the assumption that the Warsaw Pact begins combat operations after 14 days of mobilization.

³²⁴ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 85, Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," 25, Mearsheimer, *Conventional Deterrence*, 168, Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 51, Betts, "Surprise Attack: NATO's Political Vulnerability," 141, "Assessing the NATO/Warsaw Pact Military Balance," (Congressional Budget Office, 1977), 22.

³²⁵ US Congress, House Committee on Armed Services, Defense Policy Panel, *Soviet Readiness for War: Assessing One of the Major Sources of East-West Instability*, 1988, 2.

³²⁶ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 102.

³²⁷ Miller, *The Cold War: A Military History*, 359-62, Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," 18.

The second issue to examine is the time delay between the Pact decision to mobilize and the NATO decision to mobilize. It is important to keep in mind that NATO could not order its member states to begin a military mobilization. As an alliance of free and sovereign states each nation would have had to decide individually to begin mobilization. This assures that NATO's mobilization decision would not have been unanimous in terms of timing.³²⁸ What was likely was that over a period of 2-3 days each NATO government would have made the decision to mobilize. In a crisis situation the historical trend seems to be that once one member of a alliance commences mobilization the other states follow soon after, such as in August 1914.

The decision by NATO governments to mobilize would have been based on the intelligence data regarding Pact mobilization as well as the perception of Soviet intentions. An examination of NATO, particularly US, intelligence capabilities suggests that NATO would have had clear warning indicators once a Pact mobilization began.³²⁹ The development of reconnaissance satellites made surprise warfare much more difficult during the Cold War. In the 1980s the US had an array of photographic, active radar, and

³²⁸ Betts, "Surprise Attack: NATO's Political Vulnerability," 148.

³²⁹ US, "1989 Joint Military Net Assessment," 5-11, Mako, *US Ground Forces and the Defense of Europe*, 59.

electromagnetic satellites to monitor Soviet activities that could provide information about every foot of Soviet territory day and night.³³⁰ US satellites were generally multi-mission platforms that had extremely high resolution cameras.³³¹ US naval intelligence was well positioned to detect an upswing in Soviet naval activity.³³² Historically NATO intelligence was adept in detecting Soviet preparations for operations in Czechoslovakia, Poland, and Afghanistan.³³³ All in all it seems clear that NATO's intelligence apparatus would have been able to detect a Warsaw Pact mobilization early on and pass that information to their political leaders.³³⁴ This scenario will assume that NATO's decision to mobilize was, on average, 10 days prior to the start of combat operations and therefore 4 days after the Pact began to mobilize. There certainly would have been some variance in the timing of individual NATO's governments and the larger nations would probably

³³⁰ Thomas Graham and Keith A. Hansen, *Spy Satellites and Other Intelligence Technologies That Changed History* (Seattle, Washington: University of Washington Press, 2007), 139.

³³¹ Nicholas L. Johnson, *The Soviet Year in Space 1987* (Colorado Springs, Colorado: Teledyne Brown Engineering, 1988), 6, Bill Yenne, *The Encyclopedia of US Spacecraft* (New York: Exeter Books, 1985), 82.

³³² Ford and Rosenberg, "The Naval Intelligence Underpinnings of Reagan's Maritime Strategy," 397.

³³³ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 94.

³³⁴ Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 8.

have begun to mobilize earlier rather than later. The examination of mobilization and reinforcement capabilities will proceed under these assumptions.

European NATO

NATO's reinforcement plans are best considered in a national context although there is one major exception to this approach. SACEUR's³³⁵ multi-national reaction force was called the Allied Mobile Force and was made up of 7 battalions³³⁶ of infantry with supporting artillery, engineers, air defense, and armored reconnaissance units and 4 squadrons of fighters.³³⁷ This total of around 2 brigades worth of troops trained annually for operations in Norway and most likely would have been deployed there in a crisis situation.³³⁸ This unit could deploy in 2-6 days³³⁹ and therefore would have been available in Norway for operations given NATO's overall mobilization time. Aside from this force NATO's reinforcement plans were formulated and coordinated on a primarily national basis. For example the US entered into separate agreements with Belgium, the

³³⁵ Supreme Allied Commander Europe

³³⁶ A battalion is about 500-800 men

³³⁷ Andy Johnson, "NATO Order of Battle June 1989," [www.orbat.com](http://orbat.com), <http://orbat.com/site/history/historical/nato/oob1989.html>, Keegan, ed., *World Armies*, 48,95,315,609.

³³⁸ Lund, "Don't Rock the Boat: Reinforcing Norway in Crisis and War," 62.

³³⁹ *Ibid.*, 66.

Netherlands, and West Germany regarding the use of their national transportation systems during wartime. These agreements were made in a NATO context but not through NATO channels.

For Central European nations the task of mobilization and reinforcement was somewhat simpler than for the US or the UK because there were no water barriers that had to be crossed. West Germany maintained a large Territorial Army that would have been mobilized to support the professional Field Army in a crisis. All of the West German reservists in the Territorial Army could be at their units and deployed within 72 hours of a mobilization order.³⁴⁰ The Territorial Army was composed of 12 Home Defense Brigades and 15 Home Defense Regiments each with 3-5 battalions.³⁴¹ The 12 Home Defense Brigades would have been capable of front line duties while the Defense

³⁴⁰ Cordesman, *NATO's Central Region Forces*, 97, Mako, *US Ground Forces and the Defense of Europe*, 49.

³⁴¹ IISS, *The Military Balance, 1988-1989*, 66.

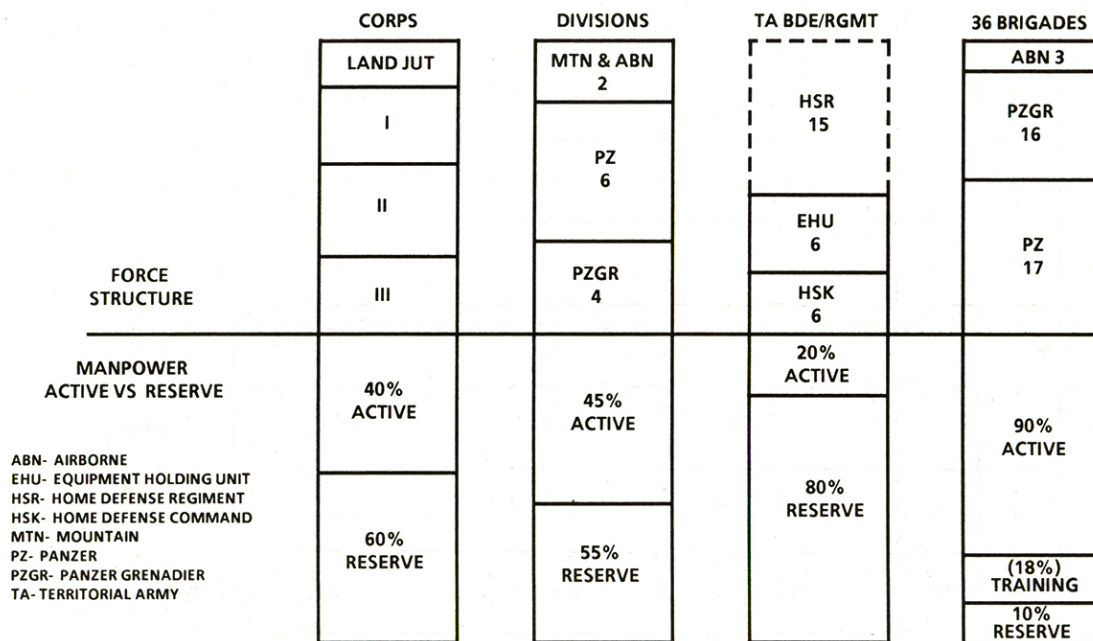


Figure 4 West German Forces³⁴²

Regiments were better suited to rear area security and dealing with Pact airborne and airmobile troops.³⁴³ So West Germany would have been able to deploy 12 additional brigades for front line duty and 15 brigade equivalents for rear area security. Many of the reservists in the Territorial Army were assigned to support units that would serve the Field Army and the Territorial Army's combat formations. Figure 4 shows the

³⁴² Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 255.

³⁴³ Hillier, "Strengthening NATO: POMCUS and Other Approaches," 20.

breakdown of active and reserve troops in each of the *Bundeswehr*'s formations. The figure shows that West German reservists played a crucial role in filling out corps and division support units as well as providing extra combat formations to supplement the Field Army.³⁴⁴ The extensive West German road and rail network would have proved invaluable in moving these units to their combat positions although most units were stationed very near their positions. However West German reserves would also have made important contributions to the ability of US forces to operate. Through a WHNS³⁴⁵ agreement the West Germans would have provided 93,000 reservists to support US combat forces and aid in the transport of US reinforcements.³⁴⁶ These reservists allowed the United States to deploy a higher percentage of combat units than would have been possible otherwise and allowed the US reinforcement plan to focus on combat forces over support forces in the initial stages.

³⁴⁴ Cordesman, *NATO's Central Region Forces*, 85.

³⁴⁵ Wartime Host Nation Support: arrangements completed between the US and various NATO nations that described how US forces would utilize national transport systems during a crisis to move supplies and reinforcements into Central Europe

³⁴⁶ Carlucci, "Report on Allied Contributions to the Common Defense," 5, Cordesman, *NATO's Central Region Forces*, 234.

The Belgian Army would have needed to mobilize and transport Belgian forces moving from Belgium to their combat stations in West Germany would have needed 4 days to form up in Belgium and move out.³⁴⁷ The Belgians also maintained WHNS agreements with the US and UK and regularly practiced these arrangements through joint exercises.³⁴⁸ In order to protect their national transportation systems the Belgians would have deployed 2 mechanized infantry brigades to protect their national territory.³⁴⁹ Three of the six Belgian active brigades is stationed in the FRG and the others would need to move from their locations in Belgium to combat positions in West Germany. Figure 5 shows the deployment of Belgian forces in Belgium. The entire Belgian I Corps, consisting of 6 brigades, could be deployed within hours of a mobilization according to the Belgian government.³⁵⁰ While this statement is optimistic the transportations that would have been used were well suited for Belgian purposes.

³⁴⁷ Cordesman, "The NATO Central Front and the Balance of Uncertainty," 40.

³⁴⁸ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 416.

³⁴⁹ Cordesman, *NATO's Central Region Forces*, 179.

³⁵⁰ Richard A. Bitzinger, "The Low Countries' NATO Policy: The Next Five Years," (Santa Monica, CA: RAND Corporation, February 1990), 15.

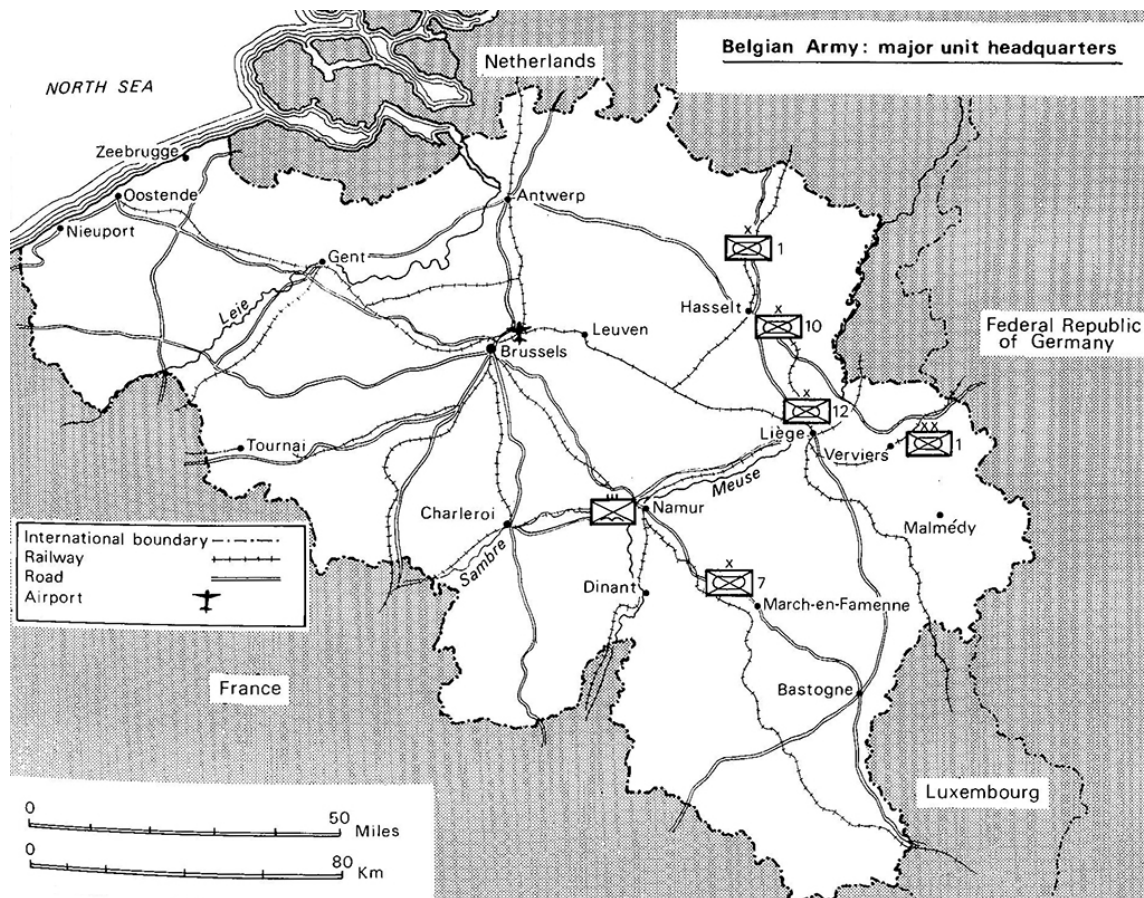


Figure 5 Belgian Units in Belgium³⁵¹

There are a number of east-west roads in northern Germany that would have facilitated the movement of these forces and the Belgian national railroad was integrated with the West German railroads. Additionally the figure shows that the Belgian forces all are located on major road and rail lines. All in all given a 10 day mobilization period the

³⁵¹ Isby and Kamps, *Armies of NATO's Central Front*, 71.

Belgians would have been able to transport their forces from Belgium to West Germany and deploy the I Belgian Corps to combat positions.

The Dutch reserve system was one of the most efficient in NATO. Whole units went from active duty to the reserves and so the members of a Dutch battalion would serve together during their entire military career. This meant that Dutch reserve units were some of the most effective in NATO and would have been available quickly for deployment. Similarly to the Belgians, the Dutch kept eight of their ten brigades on Dutch territory and these units would have been moved roughly 350km to northern West Germany in a crisis upon a mobilization order.³⁵² The deployment of these forces in the Netherlands is shown in Figure 6. The combat forces could reach their positions in the FRG in 3-4 days while the support and logistic forces would take 7-14 days.³⁵³ This is because most of the support forces are reservists who needed to be mobilized before deployment. The Dutch had pre-positioned fuel and ammunition in the FRG that would have been used by reinforcing Dutch units, allowing them to focus their

³⁵² "The Netherlands Defence White Paper 1984," (Directorate of Information, Netherlands Ministry of Defence, 1984), 29.

³⁵³ Cordesman, *NATO's Central Region Forces*, 120, Miller, *The Cold War: A Military History*, 234.



Figure 6 Dutch Forces in Netherlands³⁵⁴

³⁵⁴ Isby and Kamps, *Armies of NATO's Central Front*, 332.

transportation efforts on combat forces.³⁵⁵ Given the Dutch preparations for mobilization and the availability of transportation systems it seems that all of the combat units of I Netherlands Corps and most of the logistical units would have been in place when combat operations began. The movement of the remainder of the Dutch support units forward certainly would have been complicated by Warsaw Pact airstrikes on the West German transportation system. However the longer deployment time of these units would have not significantly affected the initial ability of I Netherlands Corps to remain in combat since the Dutch could take advantage of West German supplies and ammunition in a shortage situation. The Dutch also contributed a marine battalion to the Dutch-UK Marine Commando Brigade which will be examined later.

The involvement of France on NATO's side in a conflict in 1987 has already been shown to be the most likely course of events. Given this commitment the French capability to reinforce NATO must be considered. Similarly to the Belgians and the Dutch the French contribution would have consisted of combat forces as well as transportation and logistical systems. In peacetime France maintained three armored divisions in West Germany near the French border. French and NATO authorities had

³⁵⁵ Bitzinger, "The Low Countries' NATO Policy: The Next Five Years," 17.

worked out arrangements where French ground forces would counterattack under NATO control while remaining under French command.³⁵⁶ The balance of the French 1st Army was positioned to be able to reinforce NATO in a crisis situation. This force consisted of a total of 6 armored divisions, 2 light armored divisions, 2 motor rifle divisions, and 2 reserve Armored Cavalry Regiments.³⁵⁷ French army reservists could be mobilized in 96 hours³⁵⁸ and would primarily fill out combat support units.³⁵⁹ Additionally French reserves would form into 8 Home Defense Brigades and 22 combined arms regiments.³⁶⁰ The movement of French forces east to support West Germany was practiced every year since 1964 and the French national railroad (SNCF) and the German national railway (*Bundesbahn*) are thoroughly integrated.³⁶¹ Figure 7 shows the deployment of French forces as well as the transportation networks that would have been utilized to move these forces forward. Overall the French 1st Army and the Rapid Reaction Force of another 4 divisions would be deployed in West German within 8 days while the support units

³⁵⁶ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 296.

³⁵⁷ Cordesman, *NATO's Central Region Forces*, 202-03.

³⁵⁸ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 287.

³⁵⁹ Cordesman, *NATO's Central Region Forces*, 207.

³⁶⁰ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 294.

³⁶¹ *Ibid.*, 299.

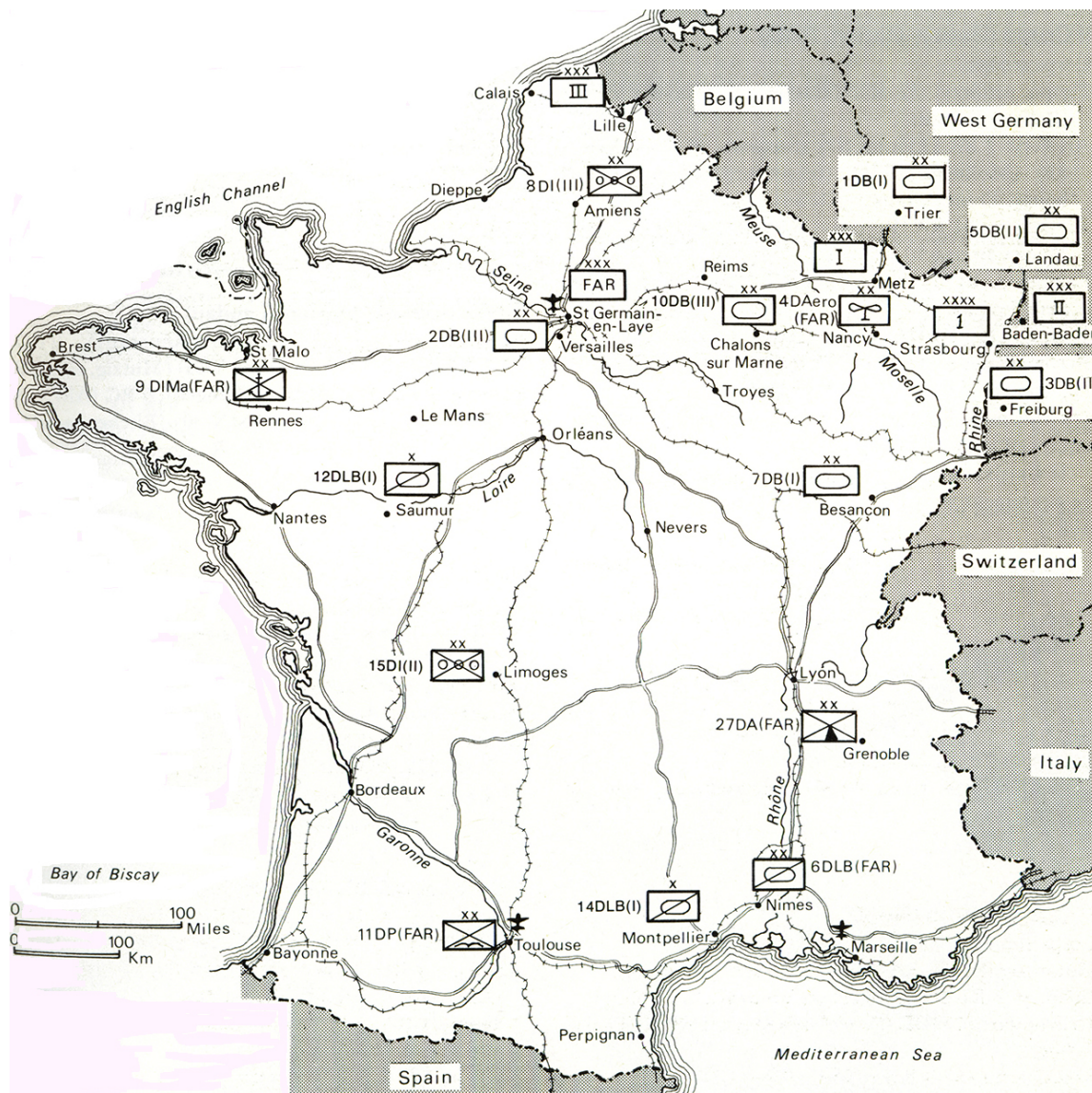


Figure 7 French Forces in France³⁶²

³⁶² Isby and Kamps, *Armies of NATO's Central Front*, 127.

would have needed 6-13 days to be fully in place.³⁶³ Given the time allotted for NATO's mobilization it seems that all of France's combat forces would have been in place to support NATO and a percentage of the support units would be ready. France's contribution to NATO's reinforcement was not limited to extra combat formations. France provided critical ports, roads, airfields, and railways that would have been used by reinforcing US and UK units especially. The French and British completed an agreement in 1976 that would have allowed British reinforcements for the British Army of the Rhine to transit through France and this agreement was practiced on several occasions.³⁶⁴ In the early 1980s France and Spain completed upgrades to their national highway and railroad systems that would have facilitated the movement of these reinforcements.³⁶⁵ The French and Spanish highways were connected and this would have opened up Spanish ports to play a role in receiving NATO reinforcements.³⁶⁶ French air and maritime forces were deployed to protect their national airspace as well as their ports.

³⁶³ Cordesman, *NATO's Central Region Forces*, 211, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 297.

³⁶⁴ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 299-300.

³⁶⁵ Wilson and Lewis, "A Follow-on Strategic Echelon for NATO," 1.

³⁶⁶ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 166.

Denmark maintained a small standing army in peacetime but recognized the need to be able to quickly deploy additional forces to defend against Pact assaults by land or by sea. The 30,000 active duty forces would be increased to 110,000 through mobilization and the 5 active brigades would be filled up to stated strength through the addition of reservists.³⁶⁷ The Regional Defense Forces total 14,000 men and were tasked with rear area security and the defense of key installations.³⁶⁸ Most of the reservists in the Danish army are deployed in support elements and these units would take a week to become ready for operations.³⁶⁹ The active forces could have been fully mobilized and deployed in 3 days.³⁷⁰ Denmark refused to allow foreign forces to be stationed on its national territory and depended on reinforcements from West Germany and the UK.³⁷¹ Denmark's generally more cool view of NATO meant that the Danish decision to mobilize would have come later in the NATO mobilization process. Even with this delay it seems clear that Danish combat forces and most of the support forces would be combat ready and in position by the time combat operations commenced.

³⁶⁷ Bitzinger, "Denmark, Norway, and NATO: Constraints and Challenges," 11.

³⁶⁸ Cordesman, *NATO's Central Region Forces*, 69.

³⁶⁹ *Ibid.*, 72.

³⁷⁰ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 504.

³⁷¹ *Ibid.*, 503.

Norway presented a special challenge for NATO's reinforcement plans. Control of northern Norway was imperative for the execution of the Maritime Strategy as well as the interdiction of Soviet submarines moving into the North Atlantic. However Norway did not allow foreign nations to station troops on its national territory in peacetime. NATO members were allowed to pre-position equipment and the Canadians, Americans, British, and Dutch all took advantage of this. Additionally Norway developed a very efficient reserve system that would have reinforced the regular army of 39,000 troops with 99,000 more in a total of 12 infantry brigades.³⁷² In 36 hours the Norwegians could mobilize these 12 brigades to reinforce their forces in northern Norway against a Soviet overland invasion.³⁷³ It would take 2 days of mobilization for 3 reserve brigades to reach north Norway and 2 more brigades would arrive by day 4.³⁷⁴ Norway would probably have begun its mobilization later than other NATO nations due to the Norwegian government's desire to not increase tensions with the Soviet Union.³⁷⁵

³⁷² Bitzinger, "Denmark, Norway, and NATO: Constraints and Challenges," 12.

³⁷³ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 529.

³⁷⁴ Terry, "Factors Affecting the Military Environment of North Norway: Its History, International Relations, Physical Characteristics, and Balance of Military Forces," 45, Lund, "Don't Rock the Boat: Reinforcing Norway in Crisis and War," 59.

³⁷⁵ Kjell Inge Bjerga, "Politico-Military Assessments on the Northern Flank 1975-1990," (Bodo: Norwegian Institute for Defense Studies, 2007), 4.

Overseas NATO

Mobilization followed by reinforcement from overseas caused a unique set of challenges that Canada, the UK, and the US had to face. Units coming across a body of water needed to first be mobilized and gathered at their base before being moved to an airfield or port for their transport. After loading onto their transportation system, the actual transport of the unit would occur, followed by unloading and moving to the area of operations. With regard to airlift one should not think of this process as moving whole brigades or divisions at a time. Rather elements of brigade would enter the 'reinforcement pipeline' in sequence and be transported in turn. Therefore the time needed for reinforcement must include the period needed to cycle a unit piece by piece into the pipeline.

Canada maintained forces for commitment to two different reinforcement areas. Canadian forces in West Germany needed 1,400 soldiers from Canada to be fully operational³⁷⁶ and Canada had dedicated the CAST³⁷⁷ Brigade to Norway in a crisis.

³⁷⁶ "Challenge and Commitment: A Defence Policy for Canada," (Department of National Defense, 1987), 35.

³⁷⁷ Canadian Air-Sea Transportable Brigade: The 5th Canadian Brigade Group with 5,000 troops trained for Arctic warfare

One battalion of the CAST had its equipment prepositioned in Norway and the other two would have needed to move by sealift.³⁷⁸ It would take 21 days to move the sealift battalions into position.³⁷⁹ The CRAF's roughly 40 transport aircraft³⁸⁰ would have been used to move the reinforcements for Canadian forces in West Germany to Europe. Given around 10 days of mobilization Canada would have brought the Canadian Brigade Group in Europe up to strength and would have been in the process of deploying the CAST when combat commenced.

The United Kingdom had three different areas of focus in a NATO crisis. The British forces in Germany, the British Army of the Rhine (BOAR), needed reinforcement, the United Kingdom Mobile Force (UKMF) was to be deployed to Denmark, and the Dutch-UK Marine Commando Brigade would have been sent to Norway. British plans called for the movement of the 2nd Infantry Division, 4 infantry brigades, and several Territorial Army (TA) units to West Germany.³⁸¹ The British practiced moving these forces in 1980 and again in 1984 during mobilization

³⁷⁸ Robert S Jordan, *Alliance Strategy and Navies: The Evolution and Scope of NATO's Maritime Dimension* (New York: St. Martin's Press, 1990), 73.

³⁷⁹ Cordesman, *NATO's Central Region Forces*, 191-95.

³⁸⁰ IISS, *The Military Balance, 1988-1989*, 60.

³⁸¹ Cordesman, *NATO's Central Region Forces*, 150.

exercises.³⁸² This movement and the deployment of the BOAR would have required 96 hours (4 days) overall.³⁸³ Additionally the British had to withdraw 10 infantry battalions from the BOAR to patrol Northern Ireland in the early 1980s. These infantry forces could be back in Central Europe in 72 hours where their equipment was stored.³⁸⁴ The British Army Reserves were dedicated primarily to filling out Regular Army units while the Territorial Army (TA) had full combat formations.³⁸⁵ The TA had around 10 brigades of infantry and an armored reconnaissance brigade that met one evening a week and one weekend a month for training and refresher courses.³⁸⁶ The United Kingdom Mobile Force of 17,000 men was a reinforced mechanized infantry brigade, the 1st Infantry Brigade, and would have been deployed to Denmark in 6 days.³⁸⁷ The UKMF was to aid Danish forces in defending against Pact amphibious operations and included a logistics group. The Dutch-UK Marine Commando Force included a battalion of Royal

³⁸² Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 337, Miller, *The Cold War: A Military History*, 244.

³⁸³ Cordesman, *NATO's Central Region Forces*, 144.

³⁸⁴ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 338, Hillier, "Strengthening NATO: POMCUS and Other Approaches," 21.

³⁸⁵ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 328.

³⁸⁶ *Ibid.*, 30,329.

³⁸⁷ Cordesman, "The NATO Central Front and the Balance of Uncertainty," 73,140, Bitzinger, "Denmark, Norway, and NATO: Constraints and Challenges," 12-13.

Dutch Marines (the 1st Amphibious Combat Group) and the 3rd UK Commando Brigade.³⁸⁸ This force was trained for arctic operations and would have been moved to Norway through sealift in a week's time.³⁸⁹ The British exercises in 1980 and 1984 demonstrated a clear understanding of the proper way to combine sealift, airlift, and pre-positioning to quickly move in reinforcing combat formations. It seems clear that the United Kingdom would have been able to reinforce the BOAR, deploy the UKMF, and assist Norway with the Marine group in the 10 days of mobilization in this scenario.

In terms of reinforcements the United States was the most important part of NATO's mobilization process. So much of NATO's energy and resources were dedicated to ensuring that US ground forces would be able to reach Central Europe and therefore it is important to understand US reinforcement and mobilization capabilities. In a crisis the US President can declare an emergency which allows him to call up 1 million reservists for 24 months; if Congress declares an emergency than all US reserves can be

³⁸⁸ Cordesman, *NATO's Central Region Forces*, 140,70.

³⁸⁹ Lund, "Don't Rock the Boat: Reinforcing Norway in Crisis and War," 62, Jordan, *Alliance Strategy and Navies: The Evolution and Scope of NATO's Maritime Dimension*, 73, Terry, "Factors Affecting the Military Environment of North Norway: Its History, International Relations, Physical Characteristics, and Balance of Military Forces," 51.

activated and conscription instituted.³⁹⁰ A decision by the US President to declare an emergency would have been seen as a very important step on NATO's part in moving towards military readiness. US reinforcement plans called for several different operations. First US troops were to be airlifted to Central Europe to take meet up with pre-positioned equipment stationed there. Secondly US sealift resources were to be used to move US troops and their equipment from the US to Europe as those troops became available for movement. Thirdly a large percentage of the US Air Force stationed in the US would have been redeployed to Europe. Finally US Marines were to move to Norway to aid in its defense. An examination of each of these operations will quickly show the complexity and massive nature of the US reinforcement effort. The US was committed to have 10 Army divisions, 60 tactical fighter squadrons, and a Marine Expeditionary Brigade in place in Europe along with the necessary support elements within a 10 day period.³⁹¹ This was known as the 'Ten in Ten' commitment, instituted

³⁹⁰ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 102.

³⁹¹ Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 5.

by President Carter in 1978,³⁹² Overall the US sought to meet its NATO reinforcement goals through a combination of sealift, triad, and prepositioning.

The US planned to move several divisions to Europe quickly to supplement its forces there, bringing the total number of US divisions in place to 10. 5 1/3 divisions were already stationed in West Germany.³⁹³ The goal therefore was to bring in another 5-6 divisions through the use of pre-positioned equipment, known as POMCUS³⁹⁴. The idea was that a unit in the US would have two sets of equipment, one in the US and one in Europe. This meant that in a crisis only the troops would need to be moved to Europe instead of all the equipment as well. POMCUS equipment was deployed so that all the equipment for a combat unit was in one location, maintained in temperature regulated warehouses and depots. The equipment was placed in West Germany around the Weser River³⁹⁵ and in Belgium and the Netherlands. When used in exercises POMCUS

³⁹² John S. Duffield, *Power Rules: The Evolution of NATO's Conventional Force Posture* (Stanford, California: Stanford University Press, 1995), 220.

³⁹³ 2 armored divisions, 2 mechanized infantry divisions, 1 armored brigade, 1 mechanized infantry brigade, and 2 armored cavalry regiments

³⁹⁴ Prepositioning of Material Configured in Unit Sets

³⁹⁵ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 358.

equipment had 97-98% operational readiness³⁹⁶ due to the extensive maintenance that was continually performed on the equipment. POMCUS equipment did not include lightweight expensive equipment such as computers and helicopters and these would have been airlifted to Europe.³⁹⁷ Throughout the 1960s and 1970s the US maintained 3 division sets of POMCUS equipment in Europe to reinforce the US V and VII Corps in central West Germany as well as equipment for support and logistical forces and an Armored Cavalry Regiment. In 1979 the decision was made to add 3 more divisional sets to this total.³⁹⁸ Two of the divisional sets of POMCUS equipment only contained 2 brigades worth of equipment instead of the standard 3 brigades as the 3rd brigade for each of those units³⁹⁹ was already stationed in West Germany.⁴⁰⁰ By 1984 1 of the new divisional sets was in place⁴⁰¹ and by 1987 all 3 had been deployed, bringing the total

³⁹⁶ US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989- Part 7 Conventional Forces and Alliance Defense*, 100th Cong., 1st sess., March 18 1987, 930.

³⁹⁷ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 104.

³⁹⁸ Hillier, "Strengthening NATO: POMCUS and Other Approaches," 4.

³⁹⁹ 1st Mechanized Infantry Division and 2nd Armored Division

⁴⁰⁰ Cordesman, *NATO's Central Region Forces*, 235.

⁴⁰¹ Organization, *NATO and the Warsaw Pact: Force Comparisons*, 7.

amount of POMCUS equipment to 6 divisions with over 500,000 tons of material.⁴⁰² If the US could move the necessary troops to Europe to man this equipment then the number of US ground troops in place would have more than doubled.

The aircraft dedicated to move the troops taking advantage of POMCUS equipment would have come from the Military Airlift Command (MAC), the Civilian Reserve Air Fleet (CRAF), and contributions by other NATO allies. MAC owned the Air Force's long range transport aircraft while the CRAF was composed of civilian passenger and freight aircraft that could be called into government service on short notice. The CRAF was primarily responsible for moving US troops while MAC carried equipment.⁴⁰³ Additionally NATO governments had pledged substantial numbers of their own national airlines to aid in moving US reinforcements to Europe.⁴⁰⁴ Table 8 details the aircraft available to airlift troops and materials to Europe in 1987.

⁴⁰² Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 25, Thomson, "An Unfavorable Situation: NATO and the Conventional Balance," 6.

⁴⁰³ Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 33.

⁴⁰⁴ Carlucci, "Report on Allied Contributions to the Common Defense," 5.

Table 8 Aircraft for US Reinforcement⁴⁰⁵

Aircraft⁴⁰⁶	Active MAC	Reserve MAC	CRAF	Other NATO
C-5	66	15		
C-141	222	16		
C-130	206	296		
KC-10	56			
Cargo⁴⁰⁷			77	28 ⁴⁰⁸
Passenger⁴⁰⁹			253 ⁴¹⁰	80 ⁴¹¹

Most of the military cargo that needed to be airlifted to Europe could be carried either by civilian freight aircraft or military transports. Only certain items such as jeeps, trucks, and helicopters had to be carrier in military transports.⁴¹² This ensured that civilian

⁴⁰⁵ Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," Appendix D.

⁴⁰⁶ See Glossary for definitions

⁴⁰⁷ Civilian freight aircraft

⁴⁰⁸ Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 34, *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989- Part 7 Conventional Forces and Alliance Defense*, 3568,76.

⁴⁰⁹ Boeing 707 or 747 or equivalents

⁴¹⁰ "US Airlift Forces: Enhancement Alternatives for NATO and Non-NATO Contingencies," (Congressional Budget Office, 1979), 9.

⁴¹¹ *National Security Strategy*, 940.

⁴¹² Jeffrey Record, *US Strategic Airlift: Requirements and Capabilities* (Washington, DC: Institute for Foreign Policy Analysis, 1986), 16.

aircraft could make a significant contribution to moving military cargo. Most of the CRAF aircraft were on 24-48 hour notice⁴¹³ and in the Persian Gulf War the CRAF system performed remarkably well.⁴¹⁴ Utilizing mostly CRAF aircraft it would have taken a little over 2 days of transit time to move the troops using POMCUS equipment from the US to European airfields.⁴¹⁵ The tanker aircraft of the MAC would also have been used to support the deployment of 60 squadrons of aircraft to Europe. The support equipment for some of these squadrons would have been transported in just over 4 days by using military transports and civilian freight aircraft.⁴¹⁶ The movement of these troops would have been aided by the 230 airfields that NATO had at its disposal.⁴¹⁷ Of the 2000 aircraft that the US planned to deploy, 1000 had pre-assigned European based where support equipment and ammunition was pre-positioned.⁴¹⁸ The movement of US ground forces to Germany to use POMCUS equipment was practiced every year through

⁴¹³ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 103.

⁴¹⁴ Robert Cheney, "Conduct of the Persian Gulf War: Final Report to Congress," (Department of Defense, 1992).

⁴¹⁵ "US Airlift Forces: Enhancement Alternatives for NATO and Non-NATO Contingencies," 49.

⁴¹⁶ *Ibid.*

⁴¹⁷ Organization, *The North Atlantic Treaty Organization: Facts and Figures*, 249.

⁴¹⁸ Cordesman, *NATO's Central Region Forces*, 246, Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 25.

the REFORGER⁴¹⁹ exercises. Given 10 days of mobilization it seems clear that US and NATO airlift capabilities were more than sufficient to bring 6 US divisions, 1 Armored Cavalry Regiment, and multiple support units into Central Europe to use POMCUS equipment.

The movement of these units to Europe was to be followed by the deployment of further US forces through the use sealift. Sealift was also responsible for bringing in the material and items needed to resupply NATO forces. The ability of NATO's maritime and air forces to protect trans-Atlantic military convoys from significant Soviet interdiction has already been shown. This allows for an examination of US and NATO sealift capabilities. The first US sealift assets were the 8 SL-7 Fast Sealift Ships (FSS) which together were able to carry the equipment for a full division in one crossing. These ships could be ready for service in 4 days, load and unload in 1 day, and cross the Atlantic in 4 days.⁴²⁰ The Military Sealift Command (MSC) could also mobilize 26 cargo ships and tankers of the Common User Fleet as well as the Ready Reserve Fleet of

⁴¹⁹ Return of Forces to Germany

⁴²⁰ *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989- Part 7 Conventional Forces and Alliance Defense*, 3583-854, Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 29.

85 ships in 10-20 days.⁴²¹ A further 324 ships could be called into military service due to contracts between the MSC and US commercial carriers.⁴²² In addition to all of these ships NATO members had pledged to contribute over 500 cargo and tanker ships to support NATO resupply efforts and US reinforcement.⁴²³ Given this vast reserve of shipping to draw on it seems that NATO would have been able to transport supplies and materials to Europe with comparative ease. The tankers would have been able to draw on the 541 million barrels of petroleum the US kept in 4 storage sites along the Gulf Coast.⁴²⁴ In terms of moving US ground troops after 10 days of mobilization only 1 division could be expected to be in place due to the limited number of FSSs. This division would be unloading and moving to the front as combat operations commenced.

⁴²¹ Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 28,31,Appendix D, *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989- Part 7 Conventional Forces and Alliance Defense*, 3583, Record, *US Strategic Airlift: Requirements and Capabilities*, 7.

⁴²² Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 31-32,Appendix D, *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989- Part 7 Conventional Forces and Alliance Defense*, 3605.

⁴²³ Carlucci, "Report on Allied Contributions to the Common Defense," 6, Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 32, *National Security Strategy*, 940, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 103.

⁴²⁴ "Report to the Congress on Expansion of the Strategic Petroleum Reserve to One Billion Barrels," (Department of Energy, US, April 1989), 4, "Strategic Petroleum Reserve: Energy Security for America," (Department of Energy, US, December 1988), 2.

The arrival of further US combat formations would be dependent on the time needed for US Army Reserve and National Guard units to become ready for deployment. After the movement of 7 Army divisions⁴²⁵ to Europe almost all of the heavy (armored and mechanized infantry) units left in the US would be Reserve and National Guard units.⁴²⁶

The US Army Reserves were primarily support units while the National Guard had a higher percentage of combat formations.⁴²⁷ The National Guard had 17 divisions stationed in the US, 9 of which were heavy divisions.⁴²⁸ A Selected Reserve Force of 6 Guard divisions and 3 brigades would have been ready for combat in under 5 weeks and it is these forces that would have been the first to be transported by sealift to Europe.⁴²⁹ The balance of the Guard formations would have been available after roughly 8 weeks of mobilization.⁴³⁰ Army Reserve units were generally support formations⁴³¹ and were held

⁴²⁵ 1st Cavalry Division, 2nd Armored Division, 1st Mechanized Infantry Division, 4 Mechanized Infantry Division, 5th Mechanized Infantry Division, 24th Mechanized Infantry Division, 9th Infantry Division, and the 3rd Armored Cavalry Regiment

⁴²⁶ Keegan, ed., *World Armies*, 620.

⁴²⁷ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 5.

⁴²⁸ *National Security Strategy*, 3195, Collins, *US Soviet Military Balance 1980-1985*, 202-03, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 114.

⁴²⁹ Mako, *US Ground Forces and the Defense of Europe*, 53, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 14.

⁴³⁰ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 102.

⁴³¹ *Ibid.*, 5,9.

a higher level of readiness since there were only enough support and logistical units in the Active Army to support 5.5 divisions.⁴³² US Army Reservists were required to be at their units and ready for deployment within in 96 hours of mobilization.⁴³³ While Army Reserve units could have been deployed in time to provide support for Active Army divisions in Central Europe it seems that National Guard combat formations would have taken around a month at the earliest to come into action.

The final component of US reinforcement plans was the deployment a Marine Expeditionary Brigade (MEB) to Norway. This unit was composed of a reinforced Marine infantry brigade, support elements, and several squadrons of tactical aircraft.⁴³⁴ The Marines had much of their equipment prepositioned in Norway and would have been able to deploy within 4-6 days of a mobilization order.⁴³⁵ The 4 ships of the Marine's Maritime Prepositioning Squadron in the Eastern Atlantic would have provided

⁴³² Charles D Odorizzi and Benjamin F Schemmer, "An Exclusive AFJ Interview with General Glenn K Otis," *Armed Forces Journal International* 124, no. 6 (January 1987): 48, *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 981.

⁴³³ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 102.

⁴³⁴ Lund, "Don't Rock the Boat: Reinforcing Norway in Crisis and War," 64.

⁴³⁵ Ibid., 63-64, Bitzinger, "Denmark, Norway, and NATO: Constraints and Challenges," 13-14, Heapy, "NATO Mobilization and Reinforcement: Can We Get There from Here?," 25.

equipment and supplies for an airlifted Marine brigade to support the MEB.⁴³⁶ Given a month the Marines could have gathered the necessary amphibious shipping to move a full Marine division in one lift⁴³⁷ but this would have had little bearing on the initial or even subsequent operations in Norway. Given NATO's mobilization time the Marines would have been able to deploy 1 brigade to Norway and the second would have been on its way.

In summary given 10 days of mobilization NATO would have been able to accomplish the following reinforcement goals. The British, West German, and Belgians would have all their combat and support forces in place while the French, Danes, and Dutch would have all their combat forces and most of their support forces deployed. The Canadians would have most of their combat and support forces ready while the US would have deployed almost of all of its available Active Army divisions and the necessary support units. Norwegian forces would have partially moved into Northern Norway along with the CAST, Dutch-UK Marine Commando Force, and the US MEB. All in all NATO seems to have been capable of reaching its mobilization objectives.

⁴³⁶ *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989- Part 7 Conventional Forces and Alliance Defense*, 3583.

⁴³⁷ *Ibid.*, 3591.

Table 9 NATO Ground Forces After Mobilization⁴³⁸

Nation	Armored Brigades	Mech Infantry Brigades	Motor Infantry Brigades⁴³⁹	Total Brigades
West Germany	17	37		54
Belgium	2	3		5
Netherlands	3	7		10
France	8	10		18
Denmark		7		7
Norway		2	10	12
Canada		1		1
UK	8	5	3	15
US⁴⁴⁰	18	14	1	32
NATO Central Europe	56	84	2	142
NATO Norway⁴⁴¹		2	12	14
Total NATO	56	86	14	156

⁴³⁸ Cordesman, *NATO's Central Region Forces*, IISS, *The Military Balance, 1988-1989*.

⁴³⁹ Motorized Infantry Brigades were transported with trucks and soft-skinned vehicles as opposed to Mechanized Infantry Brigades which used armored personnel carriers

⁴⁴⁰ A further 1 Armored Brigade and 2 Mech Infantry Brigades would have been unloading in European ports but these forces are not counted

⁴⁴¹ Norwegian Forces, 1 US Marine Brigade, Dutch-UK Marine Brigade

Table 9 summarizes NATO's ground forces in place in Europe at the end of 10 days of mobilization.

Warsaw Pact

On the surface the Warsaw Pact's mobilization and reinforcement capabilities seem to suffer less from some of the difficulties that NATO had to deal with. The Pact's reinforcements would move almost exclusively over friendly territory after a single mobilization order given by the Soviet government and on paper these reinforcements were more numerous than NATO's. In wartime the Soviet military would have assumed direct operational control of Warsaw Pact formations in order to facilitate military efficiency. However margin of superiority was not that large and several transportation and readiness issues would have challenged Pact reinforcement operations.

The Warsaw Pact would have sought to deploy some East German, Czech, and Polish troops against NATO forces while retaining others for internal security operations. An examination of potential Pact reliability in a combat situation has shown that East Germany, Polish, and Czech troops would most likely have followed deployment orders. In the case of the Poles and Czechs only a part of their national militaries were trained and equipped to operate with Soviet forces in combat operations.

Table 10 details the ground forces that these nations planned on contributing to a Soviet offensive in Central Europe. The Warsaw Pact differentiated the readiness and effectiveness of its combat formations between three different tiers, known as Category I, II, & III. East European Category I units were those held at a high state of readiness, equipped with more modern equipment, and trained to a higher standard.⁴⁴² Those units would have been used in combat operations against NATO troops. Category II and III units were held at lower states of readiness and generally had obsolete equipment.⁴⁴³ They were suited for internal security duties as well as protecting Soviet lines of communication from partisan attacks.

⁴⁴² Cordesman, "The NATO Central Front and the Balance of Uncertainty," 36.

⁴⁴³ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 360.

Table 10 Non-Soviet Pact Forces⁴⁴⁴

Nation	Cat I Armored Divisions	Cat I Motor Rifle Divisions	Cat II/III Armored Divisions	Cat II/III Motor Rifle Divisions
Poland	5	3		5
East Germany	2	4		
Czechoslovakia	1	3	4	2

It is important to keep in mind that ‘modern’ equipment for the Eastern European nations was on average a generation behind ‘modern’ Soviet equipment. Additionally Eastern European units needed longer periods of time than Soviet units before they were combat ready as their readiness standards were not as demanding.⁴⁴⁵ East German Category I units needed 3 days of mobilization while Polish and Czech Category I units needed 10 days.⁴⁴⁶ Given the relatively short distances that Polish and especially Czech

⁴⁴⁴ Joshua M. Epstein, *Conventional Force Reductions: A Dynamic Assessment* (Washington, DC: Brookings Institution, 1990), 110-17, Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," 14, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 359, Cordesman, "The NATO Central Front and the Balance of Uncertainty," 28.

⁴⁴⁵ Cordesman, "The NATO Central Front and the Balance of Uncertainty," 36.

⁴⁴⁶ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 19-20.

and East German troops would have had to travel to reach the Inner German Border (IGB) it seems clear that given the Pact's 14 days of mobilization the designated units would have been able to participate in combat operations from the start.

Soviet mobilization and reinforcement was a much larger and more involved process than it was for Eastern European nations. Soviet males 19-22 served 2-3 years on active duty and then were in the reserves until age 50.⁴⁴⁷ Soviet forces stationed within the USSR totaled over 120 divisions and while Soviet doctrine called for operations that would lead to a speedy termination of hostilities Soviet mobilization plans were clearly designed for a long, protracted conflict.⁴⁴⁸ Soviet ground forces were also divided into three tiers of readiness: Category I, II, & III. Soviet forces in Eastern Europe were held at Category I readiness and would have been ready for action within 24 hours.⁴⁴⁹ The Group of Soviet Forces Germany (GSFG), the Northern Group of Forces (NGF) in Poland, the Central Group of Forces (CGF) in Czechoslovakia, and the Southern Group of Forces (SGF) in Hungary made up the Soviet deployments in Eastern Europe. In general these forces were deployed not as combat forces but as armies of occupation with their divisions spread out.⁴⁵⁰ Figure 8, Figure 9, and Figure 10 illustrate the broad positioning of Soviet forces in Eastern Europe.

⁴⁴⁷ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 77.

⁴⁴⁸ *Ibid.*, 90.

⁴⁴⁹ Epstein, *Conventional Force Reductions: A Dynamic Assessment*, 110-11.

⁴⁵⁰ Polk, "The North German Plain Attack Scenario: Threat or Illusion?," 64.

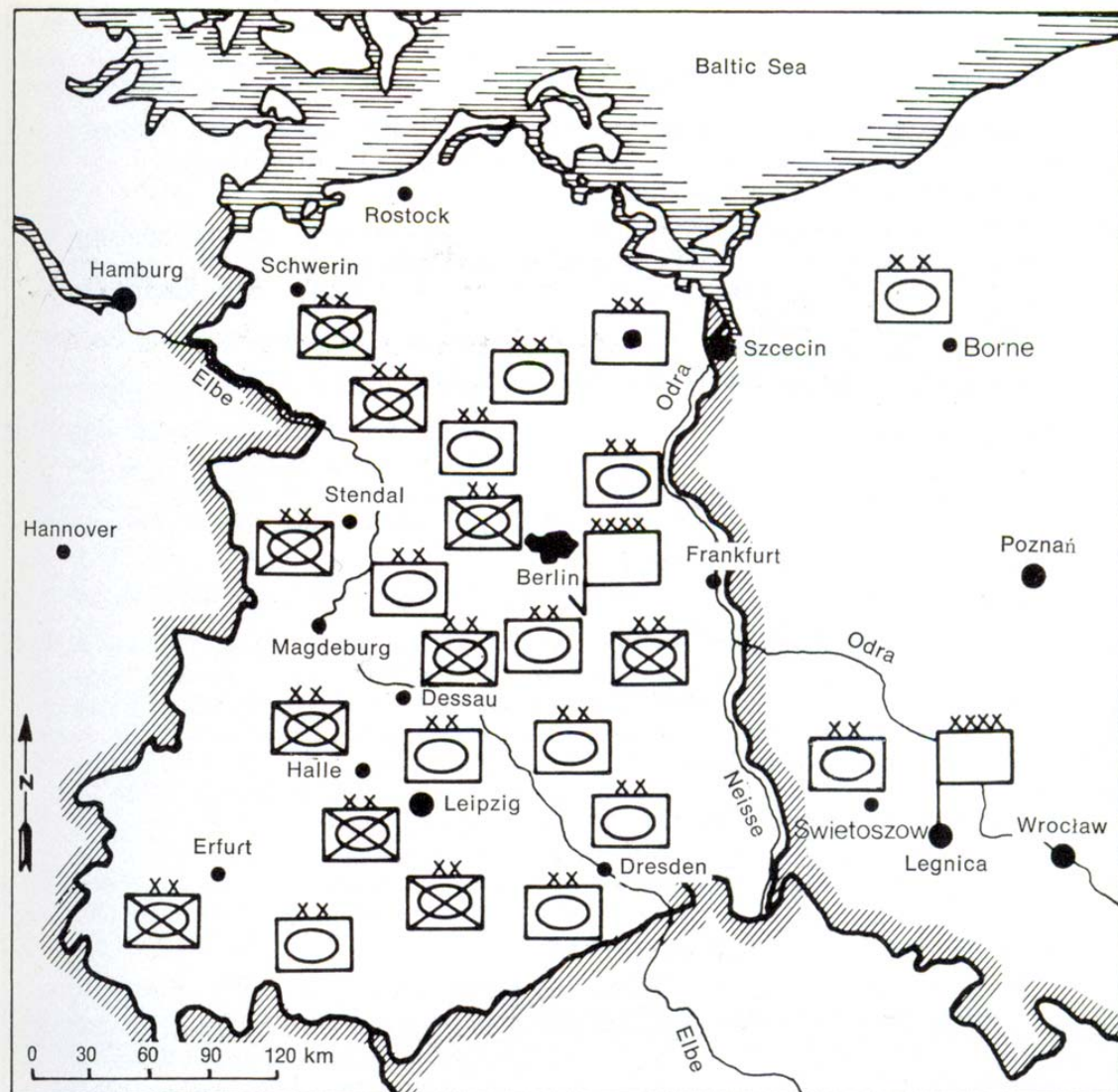


Figure 8 Soviet Forces in East Germany and Poland⁴⁵¹

⁴⁵¹ Wiener, *The Armies of the Warsaw Pact Nations: Organization, Concept of War, Weapons, and Equipment*, 63.

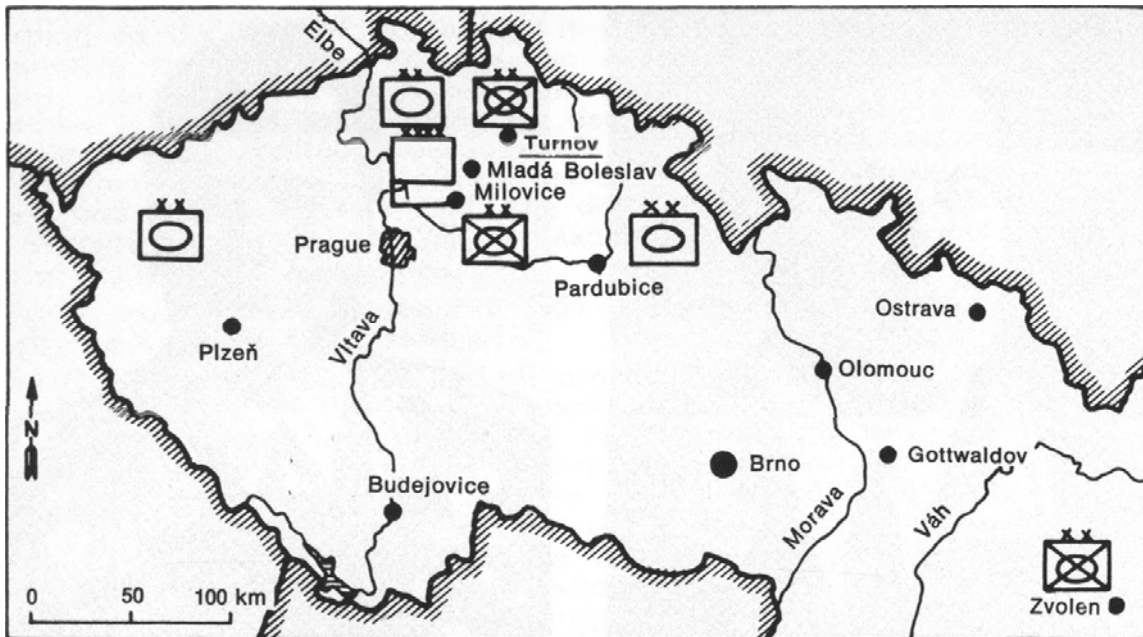


Figure 9 Soviet Forces in Czechoslovakia⁴⁵²

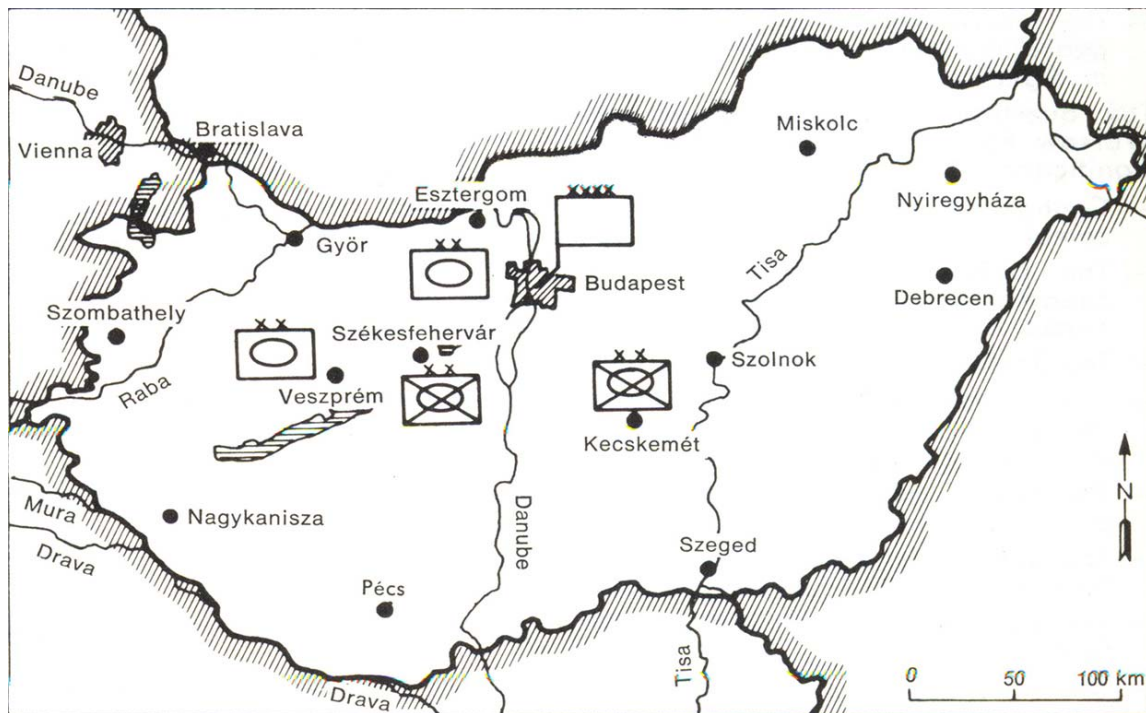


Figure 10 Soviet Forces in Hungary⁴⁵³

⁴⁵² Ibid., 16.

After a mobilization order these formations would have gathered their troops and then moved from their occupation stations to combat positions near the Inner German Border.

Table 11 shows the deployment of Soviet forces in Eastern Europe broken down by country. The Groups of Forces in East Germany and Czechoslovakia were larger due to their greater proximity to NATO forces.

Table 11 Soviet Forces in Eastern Europe⁴⁵⁴

Soviet Group of Forces	Armored Divisions	Motor Rifle Divisions
Germany (East Germany)	11	8
Northern (Poland)	2	
Central (Czechoslovakia)	2	3
Southern (Hungary)	2	2
Total Eastern Europe	17	13

Soviet units stationed in the USSR were generally held at Category II or III readiness. Category II units would have needed right around 30 days to go through

⁴⁵³ Ibid., 17.

⁴⁵⁴ Miller, *The Cold War: A Military History*, 251-52. All Soviet forces in Eastern Europe were maintained at Category I status

refresher training and draw the balance of their equipment from reserves.⁴⁵⁵ After this period of preparation Category II units would have begun moving to East Germany using the rail lines that linked the Soviet Union, Poland, Czechoslovakia, and East Germany. Soviet Category III units would have needed around 90 days of mobilization in order to become operational and even then these units would lack some of their equipment, which on the whole would be obsolete.⁴⁵⁶ Figure 11 illustrates the locations of Soviet Military Districts and Theaters of Military Operations (TVDs) while Figure 12 focuses on the Western USSR. The Southern TVD was focused on potential Middle East contingencies and was responsible for operations in Afghanistan. The Far Eastern

⁴⁵⁵ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 20, Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 90, Miller, *The Cold War: A Military History*, 324, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 459, Cordesman, "The NATO Central Front and the Balance of Uncertainty," 36, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 114, Wiener, *The Armies of the Warsaw Pact Nations: Organization, Concept of War, Weapons, and Equipment*, 122, Jeffrey Record, *Sizing up the Soviet Army* (Washington, DC: Brookings Institution, 1975), 21, Mako, *US Ground Forces and the Defense of Europe*, 60.

⁴⁵⁶ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 21, Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 90, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 79, Cordesman, "The NATO Central Front and the Balance of Uncertainty," 36, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 114, Record, *Sizing up the Soviet Army*, 22, ———, *US Strategic Airlift: Requirements and Capabilities*, 60.

TVD's mission was to act as a counter to Chinese forces which the Soviets viewed as a very real threat.⁴⁵⁷



Figure 11 Soviet Military Districts⁴⁵⁸

⁴⁵⁷ Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 42, Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 119.

⁴⁵⁸ IISS, *The Military Balance, 1988-1989*, 38.



Figure 12 Western USSR Military Districts⁴⁵⁹

Given that the Chinese military was the only one in the world that could outdo the Soviets in terms of manpower, the Soviet's traditional strength, the Soviet military was understandably concerned about maintaining an effective deterrent against Chinese forces. Table 12 shows the deployment of Soviet units within the USSR. It is important to note that only 4 divisions from the Western Theater of Military Operations were maintained at Category I status. These 4 divisions would have been available within 24 hours for transport to the East Germany or Czechoslovakia, the staging grounds for the

⁴⁵⁹ Thomson, "An Unfavorable Situation: NATO and the Conventional Balance."

Table 12 Soviet Forces in the USSR⁴⁶⁰

Military District⁴⁶¹	Cat I Armored Divisions	Cat I Motor Rifle Divisions	Cat II/III Armored Divisions	Cat II/III Motor Rifle Divisions
Western TVD⁴⁶²				
Belorussian	1	1	9	1
Carpathian	1	1	3	9
Baltic			3	7
Southwestern TVD				
Kiev			8	8
Odessa				8
Northwestern TVD				
Leningrad		1		10
Southern TVD				
North Caucasus			1	7
Trans-Caucasus				11
Turkestan				6
Afghanistan		5		
Central Reserve				
Moscow		2	2	5
Volga				4
Ural			1	5
Far Eastern TVD				
Central Asia			1	7
Siberian				6
Transbaikal			2	11
Far East			2	22
Mongolia	2	2		

⁴⁶⁰ IISS, *The Military Balance, 1988-1989*, 39-44, Keegan, ed., *World Armies*, 635.

⁴⁶¹ Several Military Districts made up each Theater of Military Operations

⁴⁶² TVD: Theater of Military Operation

Soviet offensive into Western Europe. Additionally 2 divisions from the Moscow region were available for use in Central Europe on short notice.

The varying amounts of Soviet forces in different states of readiness limited the efficiency of the Warsaw Pact transportation system in moving units to the front line. The efficiency of the transportation system would be maximized if reinforcing units achieved combat readiness and become ready for transport at a steady rate. However, reserve units would have attained combat status in large blocks according to their Category readiness numbers, whether I, II, or III. There would be some variation in mobilization time but by and large the Category II units for example, would “stand up” to active status within a few days of each other because of the similar readiness levels of personnel and equipment that they are assigned. The 5 Category I units available for rapid use in the Western USSR would not have taxed the transportation system at all especially given that the movement of those forces would have occurred prior to the start of combat operations.⁴⁶³ Following this would have been a period of more minimal use as Category II and III units mobilized. Around 30 days after mobilization the system would have been overloaded by the deluge of Category II units becoming ready for

⁴⁶³ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 368.

transport to the front. This is the first time since mobilization that the transportation grid is being utilized to capacity. At this point the bottleneck to Soviet reinforcement of their forces in Central Europe becomes the carrying capability of the transportation system and not the readiness of combat formation. Eventually this bottleneck would be reduced after the majority of Category II units in the Western TVD arrived in Central Europe only to spark up again when Category III divisions became active. The result of all of this would be an initial dearth of units ready to move and then an overwhelming demand for transport.

The structure and layout of the transportation system these Soviet reinforcements were to travel over also posed problems for the Warsaw Pact. Given the large number of units that were stationed in Eastern Europe in peacetime and the expense involved, the Soviets did not pre-position equipment for reinforcing formations in Eastern Europe. Reserves moving forward would come with their equipment and this necessitated transport by rail. There were 8 major rail lines that ran from East Germany to the Soviet Union through Poland and Czechoslovakia.⁴⁶⁴ However the railroad gauge in the Soviet

⁴⁶⁴ Wiener, *The Armies of the Warsaw Pact Nations: Organization, Concept of War, Weapons, and Equipment*, 125.

Union was different from that in Eastern Europe and so cargo had to change trains when crossing the Soviet border at 9 transshipment complexes.⁴⁶⁵ These complexes made excellent targets for NATO's Follow on Forces Attack (FOFA) plans that sought to delay the arrival of Soviet reinforcements. This need to switch track gauge would have exacerbated the bottleneck when Soviet Category II units become operational.

The final concern for Soviet reinforcement and mobilization plans was training and past performance. While the month of retraining that Category II units were to receive was similar to the time US National Guard formations planned on spending in retraining⁴⁶⁶, the annual training time was rather different. While US Reserve and National Guard units have 30-45 days of training each year Soviet reserves had little if any. Additionally the small percentage of Category II and III personnel that were on active duty year round had to spend much of their time on equipment maintenance and not field training.⁴⁶⁷ Soviet experience with mobilization orders was generally disappointing. In 1980 the Politburo ordered a mobilization in the Carpathian, Baltic, and Belorussian military districts in preparation for an intervention in Poland. Many

⁴⁶⁵ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 46.

⁴⁶⁶ Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 115.

⁴⁶⁷ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 90-91.

reservists failed to report for duty, could not be located, or deserted upon arrival at their unit. So many deserted that efforts to find and punish them were called off with the result that the coordination of personnel and equipment movement suffered.⁴⁶⁸ East European reservist performance was similar with regard to exercises, not just potential combat operations.⁴⁶⁹ Given the inefficient use of the railroad network, lower training standards, and past performance the Soviet reinforcement and mobilization process would have suffered in a crisis situation. With 14 days of mobilization the Soviets could have placed all their forces in Eastern Europe as well as a small number of reinforcements from the USSR along the IGB in preparation for combat operations. However it would have been at least 2 more weeks before Soviet Category II units could have contributed to the Warsaw Pact invasion. The units that the Warsaw Pact maintained at the highest levels of readiness were well placed and prepared to participate in combat operations on short notice. The 'favored' units in the East German, Polish, and Czech militaries would have had little difficulty in supporting a Pact invasion. The spearhead of this attack, the Soviet forces in East

⁴⁶⁸ Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 30.

⁴⁶⁹ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 381.

Germany and Czechoslovakia, would have been well supported by Soviet reinforcements from Poland, Hungary, and the Western USSR. However the Soviet reserve system suffered from deficiencies that would have limited their early involvement of these formations in a conflict.

CHAPTER 10

READINESS: TRAINING AND LOGISTICS

Readiness refers to the ability of military forces to sustain combat operations over an extended period of time. Readiness is based on training and the supplies that a nation has available to maintain its armed forces. The greater time that a formation spends in exercises and training the better prepared that unit will be for the rigors and stresses of modern warfare. The percentage of a unit's personnel that are on active duty at any time directly contributes to the readiness of a unit. At the same time even the most well trained and prepared personnel need the tools and material to engage in battle. Ammunition, spare parts, batteries, fuel, and food need to be moved from production location to supply depots to the consumer formation in the field. Most nations stockpile supplies that are hard to produce quickly such as ammunition and spare parts/ However, it is important to keep in mind that combat operations typically consume more supplies than peacetime logistic plans anticipate.

Warsaw Pact Logistics

In the area of logistics the Warsaw Pact benefited from the Communist governmental structure. While the centralization of power generally inhibits the display of initiative and independence, in terms of coordination and priority setting the result usually is an increase in efficiency. The Soviet government had a much greater ability to ensure the ability of its industry to quickly increase production of selected items in a crisis than any NATO nation. The Soviets had stockpiled sufficient supplies to provide for the initial phases of combat operations and were careful to protect their surge capability in selected industries.⁴⁷⁰ In this area of readiness the status of Eastern Europe was rather different from the Soviet Union. Eastern European nations had smaller amounts of munitions and other supplies on hand and were not as capable of sustaining combat operations for a long period of time like the Soviet Union.⁴⁷¹

While the Communist system worked well to set national priorities and ensure adequate stockpiles of critical supplies it hampered the efficiency of the military

⁴⁷⁰ US, "1989 Joint Military Net Assessment," 9-7, Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 57.

⁴⁷¹

logistics structure.⁴⁷² Soviet logistics rely on railroads to move supplies forward while trucks are only used on the tactical level to resupply forward battalions.⁴⁷³ Soviet logistical and supply planning was the model for other Warsaw Pact nations. The problem with this approach is the potential for Soviet forces to out run the railroad. As NATO units were forced to retreat they would have damaged or destroyed the transportation grid in their defending sector as much as possible. This would severely restrict the supplies that the Pact could bring forward in that sector. Historically in the invasion of Czechoslovakia Soviet units moved more quickly than their lines of communication and were out of supply for several days.⁴⁷⁴ Additionally these railroads were very vulnerable to NATO air attack and disruption. While a crater in a road can be avoided or bypassed, damage to a rail line must be repaired before service can be restored. For now it sufficient to say that NATO clearly recognized this vulnerability and developed tactics and plans to exploit it. However Soviet doctrine regarding the use of combat formations would work to mitigate this challenge. Soviet divisions were

⁴⁷² Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 13.

⁴⁷³ Record, *Sizing up the Soviet Army*, 45.

⁴⁷⁴ Ibid., 46, Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 30.

designed to engage in high-intensity, all out offensive operations for several days and then be withdrawn for rest and refitting.⁴⁷⁵ Each division would go into combat with the necessary supplies for those days of operations and then withdraw for resupply. The Soviet Army assigned a much smaller percentage of its personnel to logistical operations than NATO. This created formations that were 'top heavy' and imbalanced in terms of logistics.⁴⁷⁶ Therefore the challenges of the Soviet logistical system would have been felt only after a week of combat operations as divisions that had been on the front line once were scheduled to go back into combat. The initial supply capability of Soviet formations would have allowed them to provide for early combat operations.

NATO Logistics

The democratic structure of NATO's nations had a clear affect on the status of NATO's readiness in the 1980s. Upper level commanders quickly learned that national governments and legislatures were much more willing to appropriate money for new equipment and pay increases while stockpiling ammunition and spare parts was much less attractive. The result was that by the mid-1960s NATO's inventories of equipment

⁴⁷⁵ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 17.

⁴⁷⁶ Mearsheimer, *Conventional Deterrence*, 184.

and supplies were dangerously low.⁴⁷⁷ NATO militaries made a major effort in the 1970s to increase funding for readiness programs and the results were beginning to be felt by the 1980s.⁴⁷⁸ Certainly there were differences on a national level in terms of stockpiles. While the Belgians and Danes had lower levels of munitions in storage, West Germany, France, and the US maintained stockpiles for around 30 days of combat operations.⁴⁷⁹ While these increases in stockpiles were occurring NATO was not able to make much progress in increasing its short term production capabilities.⁴⁸⁰ This could have resulted in shortages of critical supplies after the 30 day mark. One should keep in mind that due to the attrition on military forces engaged in combat the overall demand for supplies would slowly decrease. Additionally, the Falklands War in 1982 shows that Western democracies can “rapidly develop and deploy a number of systems that would have taken years under normal conditions.”⁴⁸¹ While NATO’s initial supply capability

⁴⁷⁷ *Alliance and Defense Capabilities in Europe*, 199-200.

⁴⁷⁸ Carlucci, "Report on Allied Contributions to the Common Defense," 13.

⁴⁷⁹ Cordesman, *NATO's Central Region Forces*, 101,24,31,44,210, Carlucci, "Report on Allied Contributions to the Common Defense," 7, Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 102.

⁴⁸⁰ US, "1989 Joint Military Net Assessment," 9-8.

⁴⁸¹ Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 323.

seems to have been sufficient to support combat units the potential clearly existed for shortages and rationing on some scale after 30 days of combat.

NATO's logistical model was rather different from the Warsaw Pact's and reflected a different set of military priorities. NATO sought to keep a division in combat for as long as possible by providing a steady stream of supplies, reinforcements, and replacement equipment. NATO did not have as many divisions to work with as the Warsaw Pact and each of these NATO units was generally equipped with more advanced weapons. Therefore NATO wanted to keep the maximum number of divisions in action that it could support so as to be able to take full advantage of its technological superiority.⁴⁸² As a percentage of overall personnel, NATO committed almost twice as many soldiers to support and command structures than the Warsaw Pact in order to keep maintain its land lines of communication and keep its divisions in action longer.⁴⁸³ This was done because NATO planners created the organizational structure of their divisions on the basis of different assumptions about the relative utility of various military units

⁴⁸² Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 36.

⁴⁸³ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 10, Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 17, *Alliance and Defense Capabilities in Europe*, 216.

contributing to combat performance.⁴⁸⁴ This extra emphasis gave NATO units “greater flexibility, stability, and powers of recovery”⁴⁸⁵ NATO’s readiness was a mixed picture by 1987. Significant improvements in stockpiles ensured initial combat capability but shortages in surge production abilities posed potential challenges for longer term conflict. NATO’s logistical doctrine and training were both well suited to keeping the maximum number of well prepared divisions in combat.

Warsaw Pact Training

In terms of personnel Warsaw Pact nations kept their units at three different levels of manning. Category I units had 80-90% of their personnel on station at any time, Category II units were kept around 50% manned, while Category III units had 10-20% of their personnel on active duty.⁴⁸⁶ Soviet reservists do not train together regularly and those small parts of reserve formations that were on active duty spent most of their time doing maintenance on the division’s vehicles and not field training.⁴⁸⁷ As a result of this only Category I divisions would be considered adequately prepared for the stresses of

⁴⁸⁴ Enthoven and Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969*, 139-40,49-50, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 118-19.

⁴⁸⁵ Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 13.

⁴⁸⁶ Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 57.

⁴⁸⁷ Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 114.

combat. This is not to say that Category II and III formations would have been incapable of engaging in battle. However the damaging effects on morale and unit cohesion would be felt earlier in these units once combat operations began.

The training of Soviet active duty forces suffered from constraints due to the nature of the Soviet system. In the 1980s the Soviet leadership began to place a greater emphasis on political reliability.⁴⁸⁸ The result was an increase in political instruction in training that made the overall training experience less effective.⁴⁸⁹ On average a Soviet soldier fired 50 rounds of live ammunition a year, a Soviet tank gunner would fire 10 live rounds, and a Soviet pilot would fly 80-90 hours a year. By comparison an American soldier would fire 1000 live rounds, a tank gunner 100 rounds, and a NATO pilot would fly over 200 hours a year.⁴⁹⁰ Soviet soldiers went through their basic training using different equipment than they would use in their combat units.⁴⁹¹ Two defectors from the Soviet air force gave rather detailed descriptions of their experience in the Soviet armed forces. While these accounts much be taken with a grain of salt they detail

⁴⁸⁸ Mastny, ed., *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West*, 37.

⁴⁸⁹ Record, *Sizing up the Soviet Army*, 11.

⁴⁹⁰ Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 220.

⁴⁹¹ Record, *Sizing up the Soviet Army*, 11.

the rampant alcoholism, the deplorable care given to military personnel, and serious problem of hazing.⁴⁹² Certainly NATO armies faced the issues of alcoholism and hazing but the Soviet Army's problems were far more serious in these areas.⁴⁹³ The basic building block of an effective military organization is group solidarity, the desire to fight for the men in one's platoon or company and the individual leadership of junior officers.⁴⁹⁴ The typical Soviet junior officer would be trained in the continuous repetition of assigned tasks at the direction of a tightly controlled, centralized command system.⁴⁹⁵ He would have difficulty in communicating with all of the men in his unit as a decent percentage would speak a different language.⁴⁹⁶ In a combat situation he would be given generally minimalistic information that only deals with their area of responsibility, leaving them in the dark as to how their role fits into the larger picture or how to effectively coordinate with other commands.⁴⁹⁷ Due to the challenges faced by

⁴⁹² Alexander Zuyev, *Fulcrum: A Top Gun Pilot's Escape from the Soviet Empire* (New York: Warner Books Inc., 1992), 86,91,159,75, John Barron, *Mig Pilot: The Final Escape of Lieutenant Belenko* (New York: McGraw-Hill 1980), 95,99,104.

⁴⁹³ Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 32.

⁴⁹⁴ John Keegan, *The Face of Battle* (Londgon: Pengiun Books, 1978), 185-88.

⁴⁹⁵ US, "1989 Joint Military Net Assessment," 5-8, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 112-13.

⁴⁹⁶ *Alliance and Defense Capabilities in Europe*, 143.

⁴⁹⁷ Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 115-16.

the Soviet training system Soviet units would not have been fully prepared for the rigors and stresses of modern combat.

NATO Training

NATO units, both active and reserve, spent more time than their Pact counterparts in training exercises and active units were maintained at 90% of their total strength at any given time.⁴⁹⁸ NATO training sought to provide realistic field exercises in larger quantities than did the Warsaw Pact.⁴⁹⁹ This is not to say that there were not varieties of training among the NATO militaries. The training in the British, French, and US militaries was some of the best in NATO.⁵⁰⁰ Belgian training suffered from a lack of funding and this impacted the readiness of their personnel.⁵⁰¹ On the whole NATO officers and non-commissioned officers (NCOs) were schooled to be flexible and to demonstrate initiative.⁵⁰² Generally NATO officers were given mission objectives and

⁴⁹⁸ Brauch and Kennedy, eds., *Alternative Conventional Defense Postures in the European Theater* 56-57.

⁴⁹⁹ *Alliance and Defense Capabilities in Europe*, 233, Epstein, *Measuring Military Power: The Soviet Air Threat to Europe*, 106,10-11.

⁵⁰⁰ Cordesman, *NATO's Central Region Forces*, 150,210-11, John Keegan, *The Mask of Command* (New York: Viking Penguin Inc, 1987), 337, Bitzinger, "The Low Countries' NATO Policy: The Next Five Years," 19.

⁵⁰¹ Cordesman, *NATO's Central Region Forces*, 176.

⁵⁰² US, "1989 Joint Military Net Assessment," 5-8.

then provided the opportunity to complete those objectives as they best saw fit. From 1980-1985 the US military made major strides in educating and reducing the crime rates of its enlisted soldiers.⁵⁰³ NATO exercises rehearsed coordination between national contingents and reinforcement procedures in addition to combat operations. For example every year the United States ran its REFORGER⁵⁰⁴ exercise where the use of pre-positioned equipment to speed reinforcement was practiced. NATO published standards of training that most nations in the alliance were able to meet. Compliance with these standards ensured that NATO units would have a comparable level of experience and preparation for combat.

⁵⁰³ *Department of Defense Authorization for Appropriations for Fiscal Year 1987- Part 3 Army Programs, Navy-Marine Corps Programs, Air Force Programs*, 853-54.

⁵⁰⁴ Return of Forces to Germany

CHAPTER 11

TERRAIN AND WEATHER

In any military operation the geography and climate of the area of operations has an effect on the capabilities of the forces involved. Weather can allow or restrict operations or confer an advantage to one side or the other. Likewise terrain and manmade developments to the terrain serve to inhibit or free movement. The terrain and weather in Central Europe would have generally aided NATO in its defensive efforts. The common perception during the Cold War was that southern West German was more defensible and northern West Germany offered a level, clear route to turn NATO's flank. In reality both northern and southern West Germany were eminently suited for defensive purposes, but for different reasons.

Weather

Northern Germany has a more temperate climate while Southern Germany has a more continental climate. The worst weather generally occurs in the winter where fog and rain restrict visibility and movement. The clearest conditions are in the summer

afternoons, where low visibility conditions are present only 10% of the time.⁵⁰⁵ Morning fogs sometimes limit visibility, especially in the southern highlands.⁵⁰⁶ Prevailing winds blow from west to east generally throughout Germany. Rain and melting snow in the spring result in deep, fast flowing rivers in the early summer.⁵⁰⁷ Rain is more common in the northern lowlands which brings about muddy and marshy soil conditions.⁵⁰⁸

Terrain

West German terrain will be examined from north to south. Each NATO corps sector will be examined individually in order to highlight the ground that each national contingent would be defending. The road network is best considered as a whole before this individual corps analysis. The West German autobahn system had a large number of east-west routes, particularly in the British, US, and West German III Corps sectors.⁵⁰⁹ There were fewer north-south routes and those present were weighted towards the west. In a conflict NATO doctrine called for the allocation of some roads for civilian use in

⁵⁰⁵ Peksens, "NATO Offensive Air Power in the Central Region: TWOATAF and FOURATAF Contrasted," 7-9.

⁵⁰⁶ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 353.

⁵⁰⁷ *Ibid.*, 348.

⁵⁰⁸ Polk, "The North German Plain Attack Scenario: Threat or Illusion?," 61.

⁵⁰⁹ Mako, *US Ground Forces and the Defense of Europe*, 34.

order to keep traffic off the Main Supply Routes (MSRs).⁵¹⁰ NATO would have ordered civilians to stay at home in the event of a Pact attack to minimize the congestion on supply routes.⁵¹¹ This order would have been followed to greater and lesser degrees throughout West Germany.

When examining the terrain on which NATO would conduct its defense, there are four principles of effective use of terrain to keep mind. The defender should seek to take the high ground to provide increased visibility and defensibility and to screen the movement of friendly troops. The attacker should avoid terrain that restricts mobility, in particular badly drained ground and areas traversed by obstacles should be avoided in offensive operations. Each side should seek to control space sufficient to maneuver, retaining tactical flexibility. When possible formations should not deploy in front of impassable terrain or obstacles as this will hinder the effectiveness of the lines of communication.⁵¹²

⁵¹⁰ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 351.

⁵¹¹ Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 107.

⁵¹² Edward P.F. Rose and C. Paul Nathanail, eds., *Geology and Warfare: Examples of the Influence of Terrain and Geologists on Military Operations* (Bath, UK: The Geological Society, 2000), 32-33.

NORTHAG⁵¹³

NATO's Northern Army Group was responsible for what is known as the North German Plain. For offensive operations involving heavy mechanized forces, plains and flat terrain are often considered ideal terrain. However, the generally flat North German Plain had plentiful obstacles in the form of marshes, woodlands, waterways, and large suburban areas.⁵¹⁴ NORTHAG was responsible for 225 kilometers of the Inner German Border while CENTAG held 500 kilometers.⁵¹⁵ NORTHAG was bordered on the north by Danish forces belong to AFNORTH in the area of Schleswig-Holstein. This area has generally flat agricultural terrain surrounding the city of Hamburg and is about 70 kilometers wide.⁵¹⁶ A belt of urban development extends from Hamburg to Bremen and is interspersed with forests, lakes, and hedges that made good defensive terrain.⁵¹⁷ To the rear the Danish peninsula begins to narrow significantly, closing to a width of 50

⁵¹³ NATO's Northern Army Group which included the I Netherlands, I West German, I UK, and I Belgian Corps sectors

⁵¹⁴ Dinter and Griffith, *Not Over by Christmas: NATO's Central Front in World War III*, 30.

⁵¹⁵ Mearsheimer, *Conventional Deterrence*, 179, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 160.

⁵¹⁶ Mako, *US Ground Forces and the Defense of Europe*, 32-33.

⁵¹⁷ Cordesman, *NATO's Central Region Forces*, 63, Paul Bracken, "Urban Sprawl and NATO Defense," *Survival* 18, no. 6 (Nov/Dec 1976): 256.

kilometers between Eckernförde and Husum. Overall a fighting retreat into Denmark would be very defensible due to the marshy ground, lakes, inlets, and hedgerows of the southern Danish Peninsula.⁵¹⁸ The narrow width of this sector would limit the forces that each side could deploy effectively to about 3 divisions.⁵¹⁹ NATO would have been able to use the Elbe-Lübeck Canal, running from the Baltic to the Elbe River below Hamburg, as a natural defensive line.

To the south of this area was the area held by I Netherlands Corps. The IGB follows the Elbe River for 80 kilometers of this sector and the river is around 300 meters wide, making it a formidable obstacle for an attacking force. Most of the open fields in the area between Bremen and Hamburg running down to Hannover are a thin layer of loam overlying a bog of peat. This acts as a quick sand for heavy armored vehicles as the West Germans have learned in exercises.⁵²⁰ Cross-country travel is very difficult in these wet plains and in wet weather, which is common in this area, traffic is generally road bound.⁵²¹ This would make offensive flanking maneuvers rather difficult. In the

⁵¹⁸ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 356-57.

⁵¹⁹ Bitzinger, "Denmark, Norway, and NATO: Constraints and Challenges," 2.

⁵²⁰ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 35-361.

⁵²¹ Polk, "The North German Plain Attack Scenario: Threat or Illusion?," 61-62.

Dutch sector a number of rivers, canals, and bogs are interspersed with the urban and suburban developments of Bremen and Bremerhaven.⁵²² While Soviet doctrine called for the avoidance of urban combat, it also recognized that sometimes this was not possible.⁵²³ The belt of urban areas in this sector would have forced the Soviets into urban combat. Most of the urban sprawl in West Germany was residential apartment buildings interspersed with one and two family dwellings. The buildings were generally set far back from the streets and other buildings, providing clear fields of fire along the well-developed road networks that connected these suburban areas.⁵²⁴ NATO forces had developed specialized tactics and weapons, such as anti-tank rockets, for use in urban areas.⁵²⁵ Soviet forces also developed combined arms tactics designed to methodically advance a motor rifle battalion into a city with heavy artillery support.⁵²⁶ Given the preparations that both sides had taken neither would have been able to move away from

⁵²² Mearsheimer, *Conventional Deterrence*, 18.

⁵²³ Lewis, *The Warsaw Pact: Arms, Doctrine, and Strategy*, 269-70.

⁵²⁴ Bracken, "Urban Sprawl and NATO Defense," 255.

⁵²⁵ *Ibid.*: 259.

⁵²⁶ Lewis, *The Warsaw Pact: Arms, Doctrine, and Strategy*, 269-70.

the historical precedent of city combat. Historically operations in urban areas have been long, drawn out affairs not in keeping with the Pact need for quick advances.⁵²⁷

South of I Netherlands Corps was I West German Corps. Most of this portion of the NATO line was covered by the Lüneberger Heath extending from Hamburg south to Hannover.⁵²⁸ The Heath was dominated by higher ground that is covered by forests that would significantly slow down the movement of large armored formations. The Heath was bordered to the east by the Elbe Side Canal (*Elbeseitenkanal*) which itself was bordered by earthen embankments on either side.⁵²⁹ The entire structure was 150 m wide and would provide a natural series of defensive obstacles that the Pact would have had to breach or bridge over. To the south west of the Heath lay the Weser-Aller Plain, named for the two rivers that run through it. A line of towns bordered the Plain to the east, forming a second defensive barrier, while the rivers themselves served as fall back positions.⁵³⁰ Given the extensive advantages to the defense in this area the 13 brigades

⁵²⁷ Scharfen, "Soviet Tactical Doctrine for Urban Warfare," 21.

⁵²⁸ Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 161.

⁵²⁹ Farington, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 362.

⁵³⁰ *Ibid.*, 363.

of the I West German Corps were well positioned to impose significant delays on a Pact advance.

Next in line to the south of the West Germans was the I UK Corps sector, about 70-75 kilometers of front line.⁵³¹ Stating the exact distance that one NATO corps held was difficult because one can measure based on the contours of the IGB or along a straight line. This area formed the southern part of the North German Plain and the northern stretches of the Central Highlands. From east to west it includes the cities of Wolfsburg, Brunswick, and Hannover as well as the Aller, Leine, and Weser Rivers. The Mittelland Canal, connecting the Elbe and Rhine Rivers, ran east to west dividing the British sector into two parts.⁵³² North of the Canal a continuous urban and suburban region connected the three cities and extends all the way to the Ruhr valley near the Rhine River.⁵³³ On the edges of the city region lay the Börde, an agricultural area with more open territory, crossed by several more rivers and canals.⁵³⁴ To the south of the

⁵³¹ Mearsheimer, *Conventional Deterrence*, 180, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 161.

⁵³² Mearsheimer, *Conventional Deterrence*, 180.

⁵³³ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 364-65, Bracken, "Urban Sprawl and NATO Defense," 256.

⁵³⁴ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 366-67.

Mittelland Canal a complex of wooded ridges and ranges called the Weser-Leine Highlands covered the land.⁵³⁵ This area served to channel vehicular movement from the southeast to the northwest through heavily forested valleys that were “magnificently suited to a tactical defensive.”⁵³⁶ The combination of urban regions and rivers in the north and these wooded valleys gave the I UK Corps a large number of defensive positions and opportunities to delay a Pact thrust.

The I Belgian Corps was next in line, holding 35 kilometers of front.⁵³⁷ The eastern part of their sector contained perhaps the most formidable defensive formation in northern West Germany, the Harz Mountains.⁵³⁸ The Harz extend from East Germany into West Germany across the IGB. On the West German side the peaks were 600-700 meters high and divided by very steep valleys covered with rocks and forests. These valleys were frequented by fog throughout the year that limited visibility. Heavy rains in the summer added to several artificial lakes at the bottom of some of the valleys.⁵³⁹

⁵³⁵ Ibid., 367, Simon, ed., *NATO-Warsaw Pact Force Mobilization*, 111.

⁵³⁶ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 370.

⁵³⁷ Roger L. L. Facer, "Conventional Forces and the NATO Strategy of Flexible Response," (Santa Monica, CA: RAND Corporation, 1985), 16.

⁵³⁸ Mearsheimer, *Conventional Deterrence*, 179.

⁵³⁹ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 353,72.

Moving west through the Belgian sector an attacker who moved past the Harz would reach the southern portion of the Weser-Leine Highlands.⁵⁴⁰ These forests and ridges would have provided good defensive terrain for the central part of the Belgian sector.⁵⁴¹ Further west laid the Ruhr valley, the greatest concentration of urban and suburban centers in Germany.⁵⁴² This belt of cities and towns continued into the Netherlands and Belgium and would have served to significantly delay Pact attacks into that area. The southern border of the Belgian sector was the northern edge of the Göttingen Corridor which was in the West German III Corps sector.

CENTAG⁵⁴³

Central Army Group defended the southern part of the IGB as well as the West German border with Czechoslovakia. The terrain was usually broken due to mountains, numerous rivers, and valleys. These formations would have served to channel any attack into several areas of more open territory all the way across West Germany.⁵⁴⁴ In general

⁵⁴⁰ Polk, "The North German Plain Attack Scenario: Threat or Illusion?," 62.

⁵⁴¹ Mearsheimer, *Conventional Deterrence*, 179.

⁵⁴² Bracken, "Urban Sprawl and NATO Defense," 256.

⁵⁴³ NATO's Central Army Group comprising the III West German, V US, VII US, and II West German Corps

⁵⁴⁴ Mearsheimer, *Conventional Deterrence*, 176-78.

the Weser-Leine Highlands broaden out to the south. The ridges become more sloped and offer plenty of good defensive positions on the forward slopes.⁵⁴⁵ There were fewer cities in southern West Germany and more rural regions. However these rural regions were approximately 60% forest and village.⁵⁴⁶ On average every 12 square kilometers of rural territory has a village.⁵⁴⁷ This concentration of small hamlets would have made it impossible for the Pact attacker to bypass one village without running into another. The primary exceptions to this were the cities of Frankfurt, Nürnberg, and München. Frankfurt served as the center for West German road and air communications and would have been a critical junction for NATO.⁵⁴⁸

The northernmost corps in CENTAG was the West German III Corps. The West Germans held from the southwest Harz Mountains to the northern portion of the famous Fulda Gap. The Göttingen Gap runs through the northern part of this sector and consisted of mostly open terrain dotted with a few forests and the towns of Göttingen and Kassel. The area naturally channeled attacking forces and was more defensible in

⁵⁴⁵ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 373.

⁵⁴⁶ Bracken, "Urban Sprawl and NATO Defense," 255.

⁵⁴⁷ Mako, *US Ground Forces and the Defense of Europe*, 34.

⁵⁴⁸ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 349.

the east, closer to the IGB.⁵⁴⁹ The Gap extended for 45 kilometers from the southwestern Harz Mountains to the Werra River near Witzenhausen.⁵⁵⁰ One should keep in mind that though the phrase 'gap' is used to refer to several of the features of the terrain in southern West Germany these areas were not wide, flat plains like the American Great Plains. A 'gap' refers to a strip of ground that is less broken and covered with ridges and forests than the surrounding area. A 'gap' will always have features that limit visibility to some degree and will generally end upon reaching a major land formation. In the case of the Göttingen Gap the Weser-Leine Highlands served as the backdrop to the west. South of the Gap the Werra Woods close up the terrain and are covered by the Werra River along their eastern edge. This combination of a river backed by forests made a strong defensive position against attacks coming from East Germany.⁵⁵¹ Further south the West German III Corps shared the responsibility of defending the Fulda Gap with the US V Corps.

⁵⁴⁹ John J Mearsheimer, "Maneuver, Mobile Defense, and the NATO Central Front," *International Security* 6, no. 3 (Winter 1981/1982): 118, Mearsheimer, *Conventional Deterrence*, 178.

⁵⁵⁰ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 374.

⁵⁵¹ *Ibid.*, 375,78.

The sector of the US V Corps contained the most famous 'gap' in all of West Germany. Many analysts in the 1980s commented on how the Fulda Gap provided Soviet forces an open road to Frankfurt and the Rhine. A detailed examination of the geography of this region reveals that these analysts engaged in some understandable hyperbole. There was no clearly defined Fulda Gap but rather an area of more open ground. Three hills provided boundaries to this area, the Knüllgebirge Hill on the north side, the Rhön rock formation on the south side, and the Vogelsberg Hill in the center of the gap southwest of the town of Fulda.⁵⁵² At its widest the gap was 20-30 kilometers wide.⁵⁵³ This limited the size of a force attacking through the gap to around two divisions at a time.⁵⁵⁴ South of the Rhön stood the Grabfeld Gap, which primarily consisted of the Grabfeld Plain. The Plain was an area of open terrain dotted with towns such as Schweinfurt and Würzburg and crisscrossed by the Main River.⁵⁵⁵ The River would have provided a natural barrier and defensive position for the US forces defending

⁵⁵² *Ibid.*, 337.

⁵⁵³ Kelly, "The Myth of Soviet Superiority: A Critical Analysis of the Current Balance of Conventional Forces on the Central Front in Europe and of Possible Defence Alternatives for NATO," 27.

⁵⁵⁴ Cordesman, *NATO's Central Region Forces*, 234.

⁵⁵⁵ Faringdon, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 378.

the Gap. The border between V US Corps and VII US Corps was the southeastern edge of the Grabfeld Gap around the city of Coburg.

Coburg was located right next to the IGB and VII US Corps would have sought to take advantage of this urban area. Valleys to the south of Coburg as well as the Main River serve to direct attacking forces toward Bamberg to the south. To the east of Coburg the densely wooded Frankenwald was impassable to cross-country movement. The Hof Corridor was bordered on the north by the Frankenwald and on the south by the Fichtelgebirge, a ground swell covered in forests and large boulders. The Corridor “is an irregular zone of relatively flat ground measuring approximately 6 kilometers wide, and 40 kilometers along the north-south axis”⁵⁵⁶ that ran between these two features. The width of the corridor would have limited the formations that could be brought to bear against defenders. To the west of the border region the Main River ran back and forth, making a series of defensive barriers that US forces would have utilized. The US VII Corps was responsible down to a position just south of the intersection of West Germany, East Germany, and Czechoslovakia.

⁵⁵⁶ Ibid., 380.

The most southern NATO corps was the II West German Corps which held the 200 kilometers line south to the intersection of West Germany, Czechoslovakia, and Austria.⁵⁵⁷ This area was dominated at the border by the dense forests and hills of the Böhmerwald that ran from northwest to southeast. This natural barrier to movement was paralleled by the Bayerischerwald roughly 50 kilometers to the west. The Bayerischerwald was composed of similar terrain. To the west of the Bayerischerwald lay the Danube River Valley and the urban sprawl Munich. The northern Alps reached into this sector and were crisscrossed by numerous streams and rivers that ran along a north-south axis.⁵⁵⁸ The mountains as well as the water formations formed a series of defensive fall back positions. II West German Corps had to plan for a potential Soviet attack through Austria that would have tried to outflank CENTAG to the south.

Conclusion

Overall the terrain in West Germany was rather suitable for defensive operations.⁵⁵⁹ The combination of urban areas, good east-west road networks, rivers, extensive forests, and hilly or mountainous terrain made NATO's objective much more

⁵⁵⁷ Facer, "Conventional Forces and the NATO Strategy of Flexible Response," 16.

⁵⁵⁸ Farington, *Strategic Geography: NATO, the Warsaw Pact, and the Superpowers*, 383-85.

⁵⁵⁹ *Alliance and Defense Capabilities in Europe*, 232.

attainable. In general NATO's doctrine of Forward Defense would have allowed NATO forces to utilize as much of the good defensive terrain in West Germany as possible. The 'gaps' that had more open and flat terrain were generally flanked on both sides by powerful defensive barriers that would have given NATO forces concealed positions from which to fire on attacking units moving through the 'gaps'. Different parts of the NATO defensive line had varying terrain features but all could take advantage of these features to delay and defeat Pact forces. Warsaw Pact regimental, division, and army commanders would have had an understanding of the geography of West Germany and certainly would have been aware of these obstacles. However it is unrealistic to expect that Pact forces would be as familiar with the terrain they were attacking through as the NATO forces defending. Therefore Pact attackers would suffer delays and unexpected concentrations due to this lack of comparable familiarity.⁵⁶⁰ The weather would not have posed a serious challenge to military operations on either side aside from creating marshy conditions in the North German Plain. On the whole NATO's objective of securing West Germany would have been made easier by the geography of West Germany.

⁵⁶⁰ Dinter and Griffith, *Not Over by Christmas: NATO's Central Front in World War III*, 31.

CHAPTER 12

GROUND FORCES

While the outcome of naval and aerial operations would played an important role in a Soviet invasion of Western Europe, at the end of the day they were only peripheral events. The fight between the soldiers and vehicles of NATO and the Warsaw Pact would have been the decisive action of the invasion. The war would be decided on the ground and therefore it is necessary to have an understanding of the nature, deployment, size, and equipment of the ground forces involved.

Location and Size

The reinforcement capabilities of each alliance system have already been examined and so it possible to consider the locations of each side's forces and the direction in which these forces would be employed at the outset of a conflict in Central Europe. Table 13 and Table 14 show the forces that each side would have had available at the start of combat, based on mobilization plans and capabilities. Figure 13 shows the corps sectors for each of the NATO national corps.

Table 13 Warsaw Pact Invasion Forces⁵⁶¹

Invasion Front	Forward Divisions⁵⁶²	Operational Reserve Divisions⁵⁶³
Jutland	3	2
Coastal	3	
Central	9	5
Luxembourg	9	5
Bavarian	9	4

⁵⁶¹ Cordesman, *NATO's Central Region Forces*, Miller, *The Cold War: A Military History*, IISS, *The Military Balance, 1988-1989*.

⁵⁶² Armored and Motor Rifle Divisions

⁵⁶³ Operational reserve refers to divisions held back from the front line to be committed in reinforce of an attack. This is opposed to a tactical reserve which generally consists of one regiment from the division conducting the attack. Two of the division's regiments will attack and the third will be held in tactical reserve

Table 14 NATO Defensive Forces⁵⁶⁴

Corps Sector	Forward Divisions⁵⁶⁵	Operational Reserve Divisions
Denmark	2 1/3	2 2/3 ⁵⁶⁶
NORTHAG⁵⁶⁷		4 2/3
I Netherlands	2	1
I West German	5	2
I UK	2	2 2/3
I Belgian	1 1/3	1
CENTAG		4 2/3
III West German	3	2 1/3
V US	2 1/3	1 1/3
VII US	2 1/3	1 2/3
II West German	3	3

⁵⁶⁴ Cordesman, *NATO's Central Region Forces*, Miller, *The Cold War: A Military History*, IISS, *The Military Balance, 1988-1989*.

⁵⁶⁵ Armored and Mechanized Infantry Divisions

⁵⁶⁶ A brigade is equal to 1/3 a division

⁵⁶⁷ NORTHAG and CENTAG had their own reserves held at army group level that would have been committed to corps sectors as needed

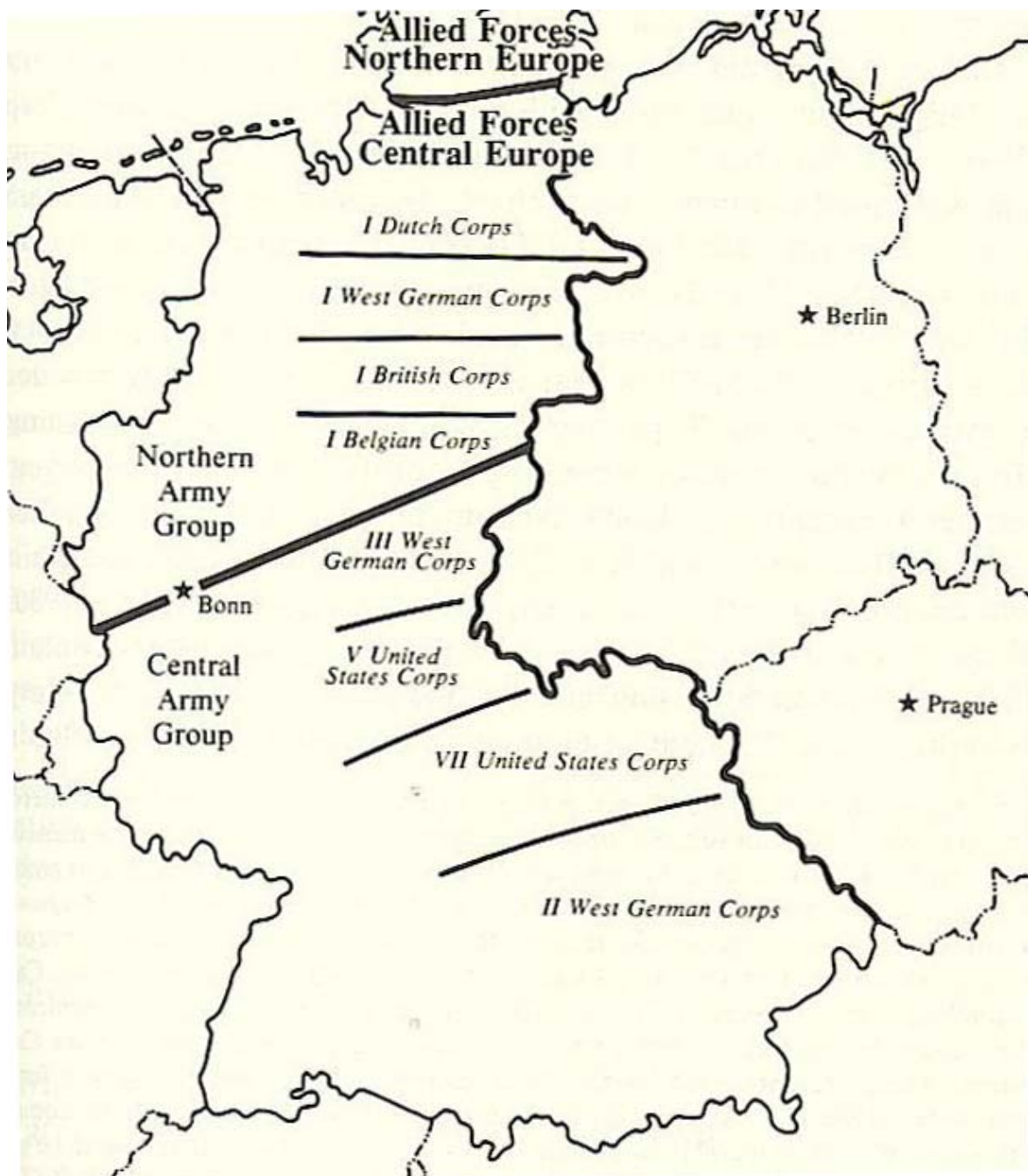


Figure 13 NATO Corps Sectors⁵⁶⁸

⁵⁶⁸ Hillier, "Strengthening NATO: POMCUS and Other Approaches."

The Jutland Front would have attacked towards Denmark with the Coastal Front following behind a few days later. The Central Front would have focused its attack on I UK Corps while the Luxembourg Front would have moved through the Fulda Gap to attack V US and III West German Corps. The Bavarian Front would have attacked II West German Corps. The attack directions just indicated are the areas where the main assault would fall. The Central, Luxembourg, and Bavarian Fronts would have launched secondary attacks with a few of their frontal divisions in order to tie down NATO's other forward forces. In the Jutland and Coastal Fronts the main attack would have tied down all of the forward divisions. The main attack for the three major Fronts⁵⁶⁹ would have been launched by 6 divisions each attacking along a 15 kilometer portion of the front.⁵⁷⁰ Each attacking division would have attacked with two regiments on the front line and one regiment ready to reinforce success.⁵⁷¹ The main weight of the Warsaw Pact was weighted towards the parts of West Germany where deep penetrations would be useful. The Jutland Front would always have been limited in its options for maneuver by the sea

⁵⁶⁹ Central, Luxembourg, and Bavarian

⁵⁷⁰ Erickson, Hansen, and Schneider, *Soviet Ground Forces: An Operational Assessment*, 62.

⁵⁷¹ *Ibid.*, 96.

on its right flank. French forces and US units taking advantage of POMCUS would have been well placed to counter such penetrations.⁵⁷²

Force to Space Ratios

An important consideration for ground combat is the subject of force to space ratios. The basic point is that there are only so many troops and vehicles that can be used effectively along a certain frontage due to the potential for overcrowding and loss of tactical flexibility and maneuverability. This principle applies to the offense as well as the defense though in different ways. The greater the density of the defending forces the less progress the attacker will make, even if the attacker has achieved the maximum density of attacking forces. In the face of air and artillery strikes, historically it has been difficult concentrate more than one heavy division along a 13 kilometer frontage due to vehicle congestion.⁵⁷³ However when attacking forces approach the maximum attacking density their losses are proportionately greater.⁵⁷⁴ On the defense one heavy division has been able to hold 25-35 kilometers of front and a brigade has been able to hold 7-15

⁵⁷² Cordesman, *NATO's Central Region Forces*, 210-11.

⁵⁷³ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 119.

⁵⁷⁴ Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 302.

kilometers depending on the terrain.⁵⁷⁵ Terrain with greater defensive potential could be held by fewer defending forces.

Table 15 NATO Corps Force to Space Ratios⁵⁷⁶

Corps Sector	Defensive Sector (In kilometers)	Forward Brigades	Reserve Brigades	Defensive Sector per Brigade
Denmark⁵⁷⁷	70	7	8	10
NORTHAG			14	
I Netherlands	40	6	3	6.6
I West German	75	15	6	5
I UK	70	6	8	11.6
I Belgian	35	4	3	8.75
CENTAG			14	
III West German	85	9	7	9.4
V US	85	7	4	12.1
VII US	130	7	5	18.5
II West German	200	9	9	22.2

⁵⁷⁵ Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, 107, Unterseher, "Conventional Land Forces for Central Europe: A Military Threat Assessment," 26, Mako, *US Ground Forces and the Defense of Europe*, 37, Mearsheimer, *Conventional Deterrence*, 181.

⁵⁷⁶ Facer, "Conventional Forces and the NATO Strategy of Flexible Response," 16, Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 161.

⁵⁷⁷ While not an official corps sector, Danish and West German forces defended the approaches to Denmark and far northern West Germany

Table 15 shows the approximate frontage that each NATO corps was assigned to defend as well as the number of brigades assigned to defend that sector.

The excellent defensive opportunities created by the terrain in West Germany have already been discussed. Therefore each brigade would have been able to effectively hold a defensive sector closer to 15 kilometers rather than 7.⁵⁷⁸ At the points where the Warsaw Pact chose to launch their main attacks the concentration of attacking forces would have been around one regiment every 7.5 kilometers. Therefore even at those points where Pact pressure was greatest NATO would have defended with odds less than 2:1. In some parts of NATO's line, such as the I West German and I Netherlands Corps, there were almost too many forward brigades in the corps sector. This would have created the opportunity for the reserves of these sectors to be utilized as reinforcements for more threatened portions of the line. Additionally NORTHAG and CENTAG both maintained large reserves that could also be used to shore up defending brigades under heavy pressure. The conclusion of US General Glenn Otis, commander of CENTAG in the 1980s that "the first echelon of the Soviet forces is going to have a whale of a time

⁵⁷⁸ See Chapter 10: Terrain and Weather for complete discussion of West Germany terrain

doing anything to us”⁵⁷⁹ seems to be accurate if a bit grandiose. It seems that the inherent advantages in the defense, combined with NATO’s density of defending forces would have made a Pact breakthrough very difficult.

Equipment

On the whole NATO equipment was more technologically advanced than the Warsaw Pact’s. An examination of how this statement worked itself out in each area of equipment would be exhausting. An analysis of the capabilities of main battle tanks on both sides will suffice as an example of NATO’s superiority in qualitative comparisons. Warsaw Pact tanks were not as accurate at long ranges and could not fire as rapidly as NATO tanks due to lower quality controls in production.⁵⁸⁰ NATO’s tanks had passive infrared systems that allowed them to see through fog, dust, and smoke while Pact tanks had to use infrared searchlights that gave away their position.⁵⁸¹ Pact tanks were designed to be cheap and mass produced and were kept in service un-upgraded far longer than NATO tanks. European NATO nations often kept older tanks in service, just

⁵⁷⁹ Odorizzi and Schemmer, "An Exclusive AFJ Interview with General Glenn K Otis," 47.

⁵⁸⁰ Bluth, "The Warsaw Pact and Military Security in Central Europe During the Cold War," 301.

⁵⁸¹ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 28-29.

as Eastern European nations did, but NATO members would upgrade their tanks with fire control systems, new main guns, and improved visibility capabilities that made the older tanks almost as capable as newer models.⁵⁸² While experience in the Middle East is not directly applicable to combat in Central Europe, Israel had been able to achieve tank exchange rates of 3:1 and 4:1 using NATO tanks against Soviet tanks.⁵⁸³

Additionally NATO's modernization programs of the late 1970s and early 1980s meant that by 1987 a much higher percentage of NATO's tank fleet had been constructed recently than the Warsaw Pact's.⁵⁸⁴ Pact tanks were often less reliable than NATO tanks again due to lower quality controls in production. This examination of main battle tanks has shown that NATO's vehicles were generally superior in construction, capabilities, and reliability. While there were some exceptions, such as in bridging equipment NATO generally had an advantage in terms of the sophistication of equipment, whether vehicles, radios, or small arms.

⁵⁸² Ibid.: 26.

⁵⁸³ Miller and Lynn-Jones, eds., *Conventional Forces and American Defense Policy*, 131, Hillier, "Strengthening NATO: POMCUS and Other Approaches," 21.

⁵⁸⁴ Chambers and Unterseher, "Is There a Tank Gap? Comparing NATO and Warsaw Pact Tank Fleets," 8, Hoffenaar and Findlay, "Military Planning for European Theatre Conflict During the Cold War: An Oral History Roundtable," 49.

Conclusion

Given the force ratios involved on the main Pact axis of attack and NATO's defensive in those sectors it does not seem that the Pact would have been able to attain the concentration of firepower needed to break clean through NATO's lines. The presences of significant reserves on both sides increased the potential for those reserves to be drawn into battles of reinforcement at the main points of attack. NATO's deployment allowed its more spread out forces, CENTAG, to utilize the best defensive terrain in West Germany to counterattack the lesser density. However the decrease in density from NORTHAG to CENTAG was well within the historical limits of a brigade's defensive capabilities. On the whole it seems that the Pact could have made steady but slow progress along its 3 main axis of attack. NATO would have reinforced these areas from its army group reserves to slow this progress even further.

CHAPTER 13

CONCLUSION

Perhaps the most important conclusion of this study is a sense of heartfelt relief that war never did break out between NATO and the Warsaw Pact. The concentration of hundreds of thousands of troops, tens of thousands of vehicles, thousands of aircraft, and hundreds of warships would have produced a carnage not seen since the Second World War. The great advances made in technology since that war would only ensure that a war in Central Europe dealt out death and destruction on a massive scale at frightening speed. The displacement of civilians, the obliteration of cities and the countryside of West Germany, and the death toll would have been horrific. The study of warfare should always lead to a desire for its prevention and this work is no different.

In terms of more technical findings this factor analysis has shown NATO's overall superiority, if not supremacy, in 1987. NATO's allies were generally more reliable in combat situations than the Warsaw Pacts. NATO's strategy was well suited for defensive purposes while the Pact would have faced key challenges in the areas of

logistics and initiative. Additionally the Soviet Union's emphasis on nuclear operations tied down critical naval and air forces in missions not directly germane to the ground operations in Central Europe. Operations on Europe's flanks would have generally seen NATO forces holding their ground although not able to significantly reinforce the Central Front. At sea NATO's maritime strength seems to have been quite capable of achieving its SLOC protection objectives given NATO's numerical superiority in warships and the Soviet Union's misemployment of its most advanced maritime units in SSBN protection and attacks on NATO carriers. Aerial operations would have given NATO an edge although not as complete or certain as at sea. NATO gained more ground combat power through the reinforcement and mobilization process than the Warsaw Pact did, primarily because the vast majority of Soviet forces in the USSR would not have been combat ready until two weeks after combat commenced. Both sides were generally capable of supplying their initial combat needs in terms of material and both would have suffered shortages in munitions especially after a few weeks of combat. In terms of ground forces NATO seems to have the defensive forces necessary to thwart a Warsaw Pact breakthrough and to hold Pact advances inside West Germany. The Alliance's modernization efforts through the late 1970s and 1980s seem to have borne fruit by

1987, giving NATO the tools to defend West Germany. Given all of these factors NATO seems to have been in a position to defeat a Warsaw Pact invasion.

One particular factor of Soviet strategy would have worked rather significantly to inhibit the appropriate deployment of Soviet air and naval forces in this conflict. This was the Soviet preoccupation with securing a favorable change in the strategic nuclear balance favorable. The United States certainly sought a similar change but did not design its conventional force doctrine around this desire, as the Soviet Union did. The United States sought to secure this change more through deploying more capable nuclear systems rather than utilizing conventional forces to achieve this end. For the Soviets conventional forces were to aid in securing this change and then be deployed against other conventional forces. If a large number of Soviet SSBNS were destroyed by NATO's ASW efforts then the strategic balance would shift against the Soviet Union. Therefore the protection of these submarines became the highest priority of the Soviet Navy. The presence of US carriers near the Soviet Union also presented a possible change in the strategic balance as they carriers could strike Soviet territory with nuclear weapons on short notice. As a result the Soviet Navy's second task was the destruction of US carriers and their aircraft. The consequence of these two priorities was to tie down

many of the maritime units that should have been attacking NATO's lines of communication. In the aerial spectrum the Soviets were primarily concerned with retaining their strategic air defense fighters and destroying NATO's theater nuclear weapons. This focused the efforts of their tactical attack aircraft on targets whose destruction did not materially aid the advance of Warsaw Pact ground forces.

Additionally this limited the deployment of Warsaw Pact fighter aircraft in defense against NATO's air strikes. The Soviet insistence on the preservation of their nuclear fighting capability is understandable given the horrific casualties they suffered during the Second World War and the resultant desire to maintain a deterrent that would prevent those losses from ever being repeated. However this emphasis on a potential nuclear war hindered the contribution that Soviet air and naval forces could have made to defeating NATO.

NATO's members were an interesting mixture with different priorities, histories, military doctrines, political views, and interests. Some members of the Alliance, such as Belgium, were primarily interested in satisfying the minimum in NATO commitments and requirements. Other nations, such as the Netherlands and West Germany, sought to maximize their limited national defense resources in making the best contribution to

NATO that they could. These differences were most visibly seen in NATO's long struggle to achieve some level of standardization and commonality in equipment, procedures, and doctrine between its members. Generally NATO's militaries followed the traditional Western model of preferring smaller professional armies lavishly trained and equipped. The greater economic power of the Alliance resulted in more advanced equipment and the ability to purchase large quantities of pre-positioned material. While NATO's future is uncertain given the lack of a common strategic threat to national sovereignty by the end of the Cold War the Alliance had made the necessary exertions to fulfill its commitment to protect the territorial integrity of its members.

It is important to keep in mind that no level of analysis can provide ironclad guarantees about the performance of military forces, past or present. What Clausewitz referred to as "friction" in warfare, the random events, difficulties, and opportunities that spring up, cannot be taken into account in this type of factor analysis. What can be done is a comparison of quantitative and qualitative factors that are most often the guides for the outcome of conflict. This allows for suggesting the most probable outcome in a given scenario. The rather different conclusion of this work, as compared to the conclusions of defense analysts during the Cold War, many of whom utilized similar techniques,

demonstrates the importance of delaying judgment about military capabilities until all the evidence is available. This study is not definitive in that greater declassification in the future may well reveal information that challenges the conclusions of this work. The history of the Cold War is still a relatively new field and time will be needed for the discipline to mature based on a common body of evidence. That evidence is more available for research purposes than 20 years ago but important gaps still remain to be filled in.

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APPENDIX I

WARSAW PACT TREATY⁵⁸⁵

“Treaty of Friendship, Cooperation and Mutual Assistance Between the People’s Republic of Albania, the People’s Republic of Bulgaria, the Hungarian People’s Republic, the German Democratic Public, the Polish People’s Republic, the Romanian People’s Republic, the Union of Soviet Socialist Republics, and the Czechoslovak Republic”

Warsaw, Poland- May 14, 1955

The Contracting Parties, reaffirming their desire for the establishment of a system of European collective security based on the participation of all European states irrespective their social and political systems, which would make it possible to unite their efforts in safeguarding the peace of Europe; mindful, at the same time, of the situation created in Europe by the ratification of the Paris agreements, which envisage the formation of a new military alignment in the shape of "Western European Union," with the participation of a remilitarized Western Germany and the integration of the latter in the North-Atlantic bloc, which increased the danger of another war and constitutes a threat to the national security of the peaceable states; being persuaded that in these circumstances the peaceable European states must take the necessary measures to safeguard their security and in the interests of preserving peace in Europe; guided by the objects and principles of the Charter of the United Nations Organization; being desirous of further promoting and developing friendship, cooperation and mutual assistance in accordance with the principles of respect for the independence and sovereignty of states and of noninterference in their internal affairs, have decided to conclude the present Treaty of Friendship, Cooperation and Mutual Assistance and have for that purpose appointed as their plenipotentiaries:

⁵⁸⁵ "The Warsaw Pact Treaty," Parallel History Project,
http://www.php.isn.ethz.ch/collections/coll_pcc/wapa_treaty.cfm.

who, having presented their full powers, found in good and due form, have agreed as follows:

Article 1

The Contracting Parties undertake, in accordance with the Charter of the United Nations Organization, to refrain in their international relations from the threat or use of force, and to settle their international disputes peacefully and in such manner as will not jeopardize international peace and security.

Article 2

The Contracting Parties declare their readiness to participate in a spirit of sincere cooperation in all international actions designed to safeguard international peace and security, and will fully devote their energies to the attainment of this end.

The Contracting Parties will furthermore strive for the adoption, in agreement with other states which may desire to cooperate in this, of effective measures for universal reduction of armaments and prohibition of atomic, hydrogen and other weapons of mass destruction.

Article 3

The Contracting Parties shall consult with one another on all important international issues affecting their common interests, guided by the desire to strengthen international peace and security.

They shall immediately consult with one another whenever, in the opinion of any one of them, a threat of armed attack on one or more of the Parties to the Treaty has arisen, in order to ensure joint defence and the maintenance of peace and security.

Article 4

In the event of armed attack in Europe on one or more of the Parties to the Treaty by any state or group of states, each of the Parties to the Treaty, in the exercise of its right to individual or collective self-defence in accordance with Article 51 of the Charter of the United Nations Organization, shall immediately, either individually or in agreement with other Parties to the Treaty, come to the assistance of the state or states attacked with all such means as it deems necessary, including armed force. The Parties to the Treaty shall immediately consult concerning the necessary measures to be taken by them jointly in order to restore and maintain international peace and security.

Measures taken on the basis of this Article shall be reported to the Security Council in conformity with the provisions of the Charter of the United Nations Organization. These measures shall be discontinued immediately the Security Council adopts the necessary measures to restore and maintain international peace and security.

Article 5

The Contracting Parties have agreed to establish a Joint Command of the armed forces that by agreement among the Parties shall be assigned to the Command, which shall function on the basis of jointly established principles. They shall likewise adopt other agreed measures necessary to strengthen their defensive power, in order to protect the peaceful labours of their peoples, guarantee the inviolability of their frontiers and territories, and provide defence against possible aggression.

Article 6

For the purpose of the consultations among the Parties envisaged in the present Treaty, and also for the purpose of examining questions which may arise in the operation of the Treaty, a Political Consultative Committee shall be set up, in which each of the Parties to the Treaty shall be represented by a member of its Government or by another specifically appointed representative.

The Committee may set up such auxiliary bodies as may prove necessary.

Article 7

The Contracting Parties undertake not to participate in any coalitions or alliances and not to conclude any agreements whose objects conflict with the objects of the present Treaty.

The Contracting Parties declare that their commitments under existing international treaties do not conflict with the provisions of the present Treaty.

Article 8

The Contracting Parties declare that they will act in a spirit of friendship and cooperation with a view to further developing and fostering economic and cultural intercourse with one another, each adhering to the principle of respect for the independence and sovereignty of the others and non-interference in their internal affairs.

Article 9

The present Treaty is open to the accession of other states, irrespective of their social and political systems, which express their readiness by participation in the present Treaty to assist in uniting the efforts of the peaceable states in safeguarding the peace and security of the peoples. Such accession shall enter into force with the agreement of the Parties to the Treaty after the declaration of accession has been deposited with the Government of the Polish People's Republic.

Article 10

The present Treaty is subject to ratification, and the instruments of ratification shall be deposited with the Government of the Polish People's Republic.

The Treaty shall enter into force on the day the last instrument of ratification has been deposited. The Government of the Polish People's Republic shall notify the other Parties to the Treaty as each instrument of ratification is deposited.

Article 11

The present Treaty shall remain in force for twenty years. For such Contracting Parties as do not at least one year before the expiration of this period present to the Government

of the Polish People's Republic a statement of denunciation of the Treaty, it shall remain in force for the next ten years.

Should a system of collective security be established in Europe, and a General European Treaty of Collective Security concluded for this purpose, for which the Contracting Parties will unswervingly strive, the present Treaty shall cease to be operative from the day the General European Treaty enters into force. ..

Done in Warsaw on May 14, 1955, in one copy each in the Russian, Polish, Czech and German languages, all texts being equally authentic. Certified copies of the present Treaty shall be sent by the Government of the Polish People's Republic to all the Parties to the Treaty.

In witness whereof the plenipotentiaries have signed the present Treaty and affixed their seals.

APPENDIX II

NATO TREATY⁵⁸⁶

“The North Atlantic Treaty”

Washington, DC- April 4, 1949

The Parties to this Treaty reaffirm their faith in the purposes and principles of the Charter of the United Nations and their desire to live in peace with all peoples and all governments.

They are determined to safeguard the freedom, common heritage and civilisation of their peoples, founded on the principles of democracy, individual liberty and the rule of law.

They seek to promote stability and well-being in the North Atlantic area.

They are resolved to unite their efforts for collective defence and for the preservation of peace and security. They therefore agree to this North Atlantic Treaty:

Article 1

The Parties undertake, as set forth in the Charter of the United Nations, to settle any international dispute in which they may be involved by peaceful means in such a manner that international peace and security and justice are not endangered, and to refrain in their international relations from the threat or use of force in any manner inconsistent with the purposes of the United Nations.

Article 2

The Parties will contribute toward the further development of peaceful and friendly international relations by strengthening their free institutions, by bringing about a better understanding of the principles upon which these institutions are founded, and by promoting conditions of stability and well-being. They will seek to eliminate conflict in

⁵⁸⁶ "The North Atlantic Treaty," North Atlantic Treaty Organization,
<http://www.nato.int/docu/basicxt/treaty.htm>.

their international economic policies and will encourage economic collaboration between any or all of them.

Article 3

In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack.

Article 4

The Parties will consult together whenever, in the opinion of any of them, the territorial integrity, political independence or security of any of the Parties is threatened.

Article 5

The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognised by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.

Any such armed attack and all measures taken as a result thereof shall immediately be reported to the Security Council. Such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security.

Article 6 ⁽¹⁾

For the purpose of Article 5, an armed attack on one or more of the Parties is deemed to include an armed attack:

- on the territory of any of the Parties in Europe or North America, on the Algerian Departments of France ⁽²⁾, on the territory of or on the Islands under the

jurisdiction of any of the Parties in the North Atlantic area north of the Tropic of Cancer;

- on the forces, vessels, or aircraft of any of the Parties, when in or over these territories or any other area in Europe in which occupation forces of any of the Parties were stationed on the date when the Treaty entered into force or the Mediterranean Sea or the North Atlantic area north of the Tropic of Cancer.

Article 7

This Treaty does not affect, and shall not be interpreted as affecting in any way the rights and obligations under the Charter of the Parties which are members of the United Nations, or the primary responsibility of the Security Council for the maintenance of international peace and security.

Article 8

Each Party declares that none of the international engagements now in force between it and any other of the Parties or any third State is in conflict with the provisions of this Treaty, and undertakes not to enter into any international engagement in conflict with this Treaty.

Article 9

The Parties hereby establish a Council, on which each of them shall be represented, to consider matters concerning the implementation of this Treaty. The Council shall be so organised as to be able to meet promptly at any time. The Council shall set up such subsidiary bodies as may be necessary; in particular it shall establish immediately a defence committee which shall recommend measures for the implementation of Articles 3 and 5.

Article 10

The Parties may, by unanimous agreement, invite any other European State in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area to accede to this Treaty. Any State so invited may become a Party to the

Treaty by depositing its instrument of accession with the Government of the United States of America. The Government of the United States of America will inform each of the Parties of the deposit of each such instrument of accession.

Article 11

This Treaty shall be ratified and its provisions carried out by the Parties in accordance with their respective constitutional processes. The instruments of ratification shall be deposited as soon as possible with the Government of the United States of America, which will notify all the other signatories of each deposit. The Treaty shall enter into force between the States which have ratified it as soon as the ratifications of the majority of the signatories, including the ratifications of Belgium, Canada, France, Luxembourg, the Netherlands, the United Kingdom and the United States, have been deposited and shall come into effect with respect to other States on the date of the deposit of their ratifications. ⁽³⁾

Article 12

After the Treaty has been in force for ten years, or at any time thereafter, the Parties shall, if any of them so requests, consult together for the purpose of reviewing the Treaty, having regard for the factors then affecting peace and security in the North Atlantic area, including the development of universal as well as regional arrangements under the Charter of the United Nations for the maintenance of international peace and security.

Article 13

After the Treaty has been in force for twenty years, any Party may cease to be a Party one year after its notice of denunciation has been given to the Government of the United States of America, which will inform the Governments of the other Parties of the deposit of each notice of denunciation.

Article 14

This Treaty, of which the English and French texts are equally authentic, shall be deposited in the archives of the Government of the United States of America. Duly certified copies will be transmitted by that Government to the Governments of other signatories.

1. The definition of the territories to which Article 5 applies was revised by *Article 2 of the Protocol to the North Atlantic Treaty* on the accession of Greece and Turkey signed on 22 October 1951.
2. On January 16, 1963, the North Atlantic Council noted that insofar as the former Algerian Departments of France were concerned, the relevant clauses of this Treaty had become inapplicable as from July 3, 1962.
3. The Treaty came into force on 24 August 1949, after the deposition of the ratifications of all signatory states.

APPENDIX III

CHURCHILL ON MOBILIZATION⁵⁸⁷

Prime Minister to General Ismay, for Secretary of State for War and C.I.G.S.
(Copy to C.-in-C. Home Forces.)

The statement that one division could not be transferred from Great Britain to Ireland in less than eleven days, no matter how great the emergency nor how careful the previous preparations, is one which deserves your earnest attention. When we remember the enormous numbers which were moved from Dunkirk to Dover and the Thames last May under continued enemy attack, it is clear that the movement of personnel cannot be the limiting factor. The problem is therefore one of the movement of the artillery and vehicles. This surely deserves special study. Let me see the exact programme which occupies the eleven days, showing the order in which men, guns, and vehicles will embark. This would show perhaps that, say, nine-tenths of the division might come into action in much less than eleven days. Or, again, a portion of the mechanical transport, stores, and even some of the artillery, including Bren gun-carriers, might be found from reserves in this country and sent to Ireland in advance, where they would be none the less a reserve for us, assuming no need in Ireland arose. Surely now that we have the time some ingenuity might be shown in shortening this period of eleven days to move fifteen thousand fighting men from one well-equipped port to another- the voyage taking only a few hours. If necessary some revision of the scale of approved establishments might be made in order to achieve the high tactical object of a more rapid transference and deployment.

We must remember that in the recent training exercise "Victor" five German divisions, two of which were armoured and one motorised, were [supposed to be] landed in about forty-eight hours in the teeth of strenuous opposition, not at a port with quays and cranes, but on the open beaches. If we assume that the Germans can do this, or even half of it, we must contrast this with the statement of the eleven days required to shift one division from the Clyde to Belfast. We have also the statement of the Chiefs of Staff

⁵⁸⁷ Winston Churchill, *The Second World War: The Grand Alliance*, vol. 3 (Boston: Houghton Mifflin Company, 1950), 731.

Committee that it would take thirty days to land one British division unopposed alongside the quays and piers of Tangier. Perhaps the officers who worked out the landings of the Germans under "Victor" could make some suggestion for moving this division into Ireland via Belfast without taking eleven days to do it. Who are the officers who worked out the details that this move will take eleven days? Would it not be wise to bring them into contact with the other officers who landed these vast numbers of Germans on our beaches so swiftly and enables whole armoured divisions and motorised troops to come into full action in forty-eight hours?

Evidently it would be wiser to keep the option of moving this division as long as possible, and in order to do this we must have the best plan worked out to bring the largest possible portion of the division into action in Ireland in the shortest possible time. I am not prepared to approve the transfer of the divisions until this inquiry has been made. There must be an effort to reconcile the evident discrepancies as between what we assume the enemy can do and what in fact we can do ourselves.

CURRICULUM VITA

CORBIN MATTHEW WILLIAMSON

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EDUCATION

Texas A&M University	Bachelor's of Arts
College Station, Texas	Major: History
Expected Graduation: May 2008	GPR: 3.7/4.0

LEADERSHIP EXPERIENCE

Department of Residence Life, Texas A&M University

- Resident Advisor (2005-2008), Clements Hall
- Developed extensive and diverse community on 3rd and 1st floors through regular involvement in 50 residents' lives and encouraging inter-residential fellowship.
- Gained reputation as a problem solver and resource for hall issues through consistent enforcement and clear communication of Department policies.
- Practiced critical thinking and conflict resolution skills through 15+ roommate mediations.

Campus Crusade for Christ

- Conferences Director (2006-2007), Student Director (President) (2007-2008)
- Coordinated three conferences and retreats for groups of up to 80 students.
- Organized advertising, logistics, and community fellowship times.
- Helped manage a budget of \$1000 for advertising and scholarships.
- Provided direction and guidance for a movement of 200 students through regular interaction with Bible study leaders and Crusade staff.
- Led biweekly meeting of 12 leadership students to communicate purpose and vision and prepare organizational activities.
- Planned, directed, and executed a preparation and team building weekend for the leadership team.

RESEARCH

Texas A&M University Undergraduate Research Fellows Program Class of 2008

- Thesis: *Factors Affecting the Feasibility of a Warsaw Pact Invasion of Western Europe*
- Exercised analytic and critical reading skills in examining government reports and scholarly publications to present holistic investigation.
- Utilized research budget of \$300 and worked under a faculty advisor