(2)

STUDY PROJECT

ARMORED BATTLE GROUPS IN THE 21ST CENTURY

BY

LIEUTENANT COLONEL WENDELL D. KOT

31 MARCH 1989

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle): ARMORED BATTLE GROUPS IN THE 21ST CENTURY	5. TYPE OF REPORT & PERIOD COVERED: Individual Study Project
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s): Lieutenant Colonel Wendell D. Kot	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS: US Army War College, Carlisle Barracks, PA 17013-5050	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: Same	12. REPORT DATE: 31 March 1989
	13. NUMBER OF PAGES: 97
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report): Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution is unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The 21st century will bring many challenges. The U.S. Army will continue to have a strategic mission - to project land combat power worldwide. The Army will have to accomplish this mission in an environment characterized by decreased defense spending, increased procurement costs, and increased competition between the services to finance their modernization programs. Soviet General Secretary Gorbachev's new initiatives, the real potential of conventional arms reduction treaties, the increased cost of maintaining overseas bases, and changing foreign attitudes in regards to the forward basing of U.S.

forces will impact on one of our fundamental elements of military strategy - forward deployed forces. This paper briefly examines the future threat and what strategic, operational and tactical implications can be expected to evolve from this threat. An alternative to today's heavy division force structure - Armored Battle Groups is examined. The Armored Battle Group organization developed in the paper is a state-of-the-art, self-contained force capable of continuous, sustained operations, increased unit mobility, agility and organic firepower, and improved communications, intelligence, and command and control. Together with the Armored Battle Group, a different strategic deployment concept - Battle Group POMCUS Ships is developed as a potential solution to the Army's heavy division strategic deployment shortfall. Training, sustainment and operational readiness issues concerning these two concepts are also addressed.

USAWC MILITARY STUDIES PROGRAM PAPER

ARMORED BATTLE GROUPS IN THE 21ST CENTURY

AN INDIVIDUAL STUDY PROJECT

by

Lieutenant Colonel Wendell D. Kot, IN

Colonel(Ret.) Dwight L. Adams
Project Advisor

U.S. Army War College
Carlisle Barracks, Pennsylvania 17013
31 March 1989

ABSTRACT

AUTHOR: Wendell D. Kot, LTC, IN

TITLE: Armored Battle Groups in the 21st Century

FORMAT: Individual Study Project

DATE: 31 March 1989 PAGES: 92 CLASSIFICATION: Unclassified

The 21st century will bring many challenges. The U.S. Army will continue to have a strategic mission - to project land combat power worldwide. The Army will have to accomplish this mission in an environment characterized by decreased defense spending, increased procurement costs, and increased competition between the services to finance their modernization programs. Soviet General Secretary Gorbachev's new initiatives, the real potential of conventional arms reduction treaties, the increased cost of maintaining overseas bases, and changing foreign attitudes in regards to the forward basing of U.S. forces will impact on one of our fundamental elements of military strategy - forward deployed forces.

This paper briefly examines the future threat and what strategic, operational and tactical implications can be expected to evolve from this threat. An alternative to today's heavy division force structure - Armored Battle Groups is examined. The Armored Battle Group organization developed in the paper is a state-of-the-art, self-contained force capable of continuous, sustained operations, increased unit mobility, agility and organic firepower, and improved communications, intelligence, and command and control.

Together with the Armored Battle Group, a different strategic deployment concept - Battle Group PCMCUS Ships is developed as a potential solution to the Army's heavy division strategic deployment shortfall. Training, sustainment and operational readiness issues concerning these two concepts are also addressed.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

Page

ARMORED BATTLE GROUPS IN THE 21ST CENTURY

CHAPTER I

INTRODUCTION

> "The United States ought not to indulge a persuasion that, contrary to the order of human efforts, they will forever keep at a distance those painful appeals to arms, with which the history of every other nation abounds. There is a rank due to the United States among nations, which will be withheld, if not absolutely lost, by the reputation of weakness - if we desire to secure peace, one of the most powerful institutions of rising prosperity, it must be known that we are at all times ready for war."
>
> George Washington
> Message to Congress, 1793

THE NATION AND MILITARY POWER

The Constitution of the United States and the National Security Act of 1947 provide the legal basis and foundation for the furtherance of U.S. national interests. The National Security Act, as amended, established the following broad missions for each of the military services: (1) "support and defend the Constitution of the United States against all enemies, foreign and domestic"; (2) "ensure, by timely and effective military action, the security of the United States, its possessions, and areas vital to its interest"; (3) "uphold and advance the national policies and interests of the United States"; and (4) "safeguard the internal security of the United States."[1]

U.S. national security strategy and national security objectives are a reflection of our national interests: (1) survival of the United States as a free and independent nation; (2) a

healthy and growing U.S. economy to provide opportunity for individual prosperity and a resource base for our national endeavors; (3) a stable and secure world, free of major threats to U.S. interests; (4) growth of human freedoms, democratic institutions, and free market economies throughout the world; and (5) healthy and vigorous alliances.[2] Principle security objectives are: to maintain the security of our nation and our allies; to respond to the challenges of a global economy; to defend and advance the cause of democracy, freedom, and human rights throughout the world; to resolve peacefully disputes which effect our interests in troubled regions; and to build effective and friendly relationships with nations who share our concerns.[3]

National security strategy and objectives are reflected in the fundamental elements of current U.S. military strategy: "nuclear deterrence supported by negotiated arms reductions and the investigation of defensive potential through the Strategic Defense Initiative (SDI); strong alliances; forward deployed forces; a strong central reserve; force mobility; freedom of the seas, air, and space; effective command and control; and timely and accurate intelligence".[4] The forward deployed forces strategy is particularly important because it represents a four-decade-old policy whereby we maintain troops overseas not so much in defense of allies, but to confront the Soviet Union on its periphery, rather than on American shores.[5]

It is from these national security interests, objectives and elements of military strategy that the United States Army draws

its strategic mission - to project ground combat power worldwide to symbolize national resolve and execute national will.[6] The U.S. Army Posture Statement for FY89 lists the following global missions: (1) defeat a Warsaw Pact attack on NATO and maintain its territorial integrity and security; (2) deny Soviet control of Persian Gulf oil; (3) defend vital U.S. interests in the Pacific; (4) support allies in Asia, Latin America and Africa; (5) maintain, with other services, a strategic reserve capable of responding to threats in the Western Hemisphere; and (6) respond to other threats to U.S. interests any where in the world.[7]

In the Forward to the Posture Statement, the Secretary of the Army and Chief of Staff of the Army state that in order to accomplish these missions our Army must have: "high quality, retainable soldiers; superb, realistic training and progressive leader development; up-to-date doctrine which guides leader development, organization, training, and modernization of the force; high quality material systems for close, deep, and rear operations that meet the requirements of the unified and specified commander-in-chief and emphasize placing U.S. strengths against exploitable threat vulnerabilities; and a research and development establishment that can extract maximum benefit from modern technologies to assure the Army's qualitative edge over potential enemies in the future".[8] These goals are supported by the priorities established for the FY 89 budget revision: maintain essential force readiness; protect essential sustainability; slow the pace of modernization; and minimize force structure impact.[9] Army leadership also recog-

nized that if the Army's budget continued to decline in the long run, previous achievements would be dissipated and our ability to shape a secure future would be imperiled.[10]

CURRENT DILEMMA

A dichotomy exists between the Army's global, strategic missions and the focus of the Army's effort in shaping the forces necessary to accomplish these missions. In the preceding quotation, the focus is clearly at operational level and below - individual soldiers, training, doctrine, material systems, and research and development. The Army's missions, however, are global, and the focus of its efforts in shaping the forces required to accomplish these missions must include strategic deployment - to project ground combat power worldwide.

The Army Long Range Planning Guidance (ALRPG), which is the key document for directing change and providing future guidance, makes a planning assumption that "air and sea lift requirements will continue to exceed U.S. capability".[11] The ALRPG also establishes a mobilization/deployment goal to "develop the ability to generate strategic lift and cargo offload/discharge systems adequate to deliver mobilized forces on time to the forward area in accordance with international agreements".[12]

Many in the Army today would say that the Army has recognized the strategic lift shortfall, and this was one of the primary reasons behind the development and formation of light Infantry divisions which can be moved quickly with our constrained airlift assets to any location in the world. **Will this strategy meet the**

future threat? Will the light division be a viable force in the 21st century?

Can we afford to build the airlift assets required to move our heavy divisions? What about strategic sealift? The Department of Defense (DOD) budget is coming under increasing pressure for cuts to help reduce the Federal budget deficit. Modernization programs in all services are expensive. Competition for funds is sharp. The U.S. Air Force built more than 5,000 F-4 fighter jets over a period of 18 years at a cost of about $13 million per aircraft.[13] Its replacement, the F-15, is a much better fighter against both air and ground threats, but costs almost three times as much (approaching $40 million each) and only 850 have been built.[14] Since the mid-1970s, the price tag of arming and equipping each American soldier has risen from $92,000, on average, to $129,000, a 41 percent increase.[15]

Needed strategic airlift procurement is competing against new strategic missiles, stealth bombers and fighters, nuclear submarines and aircraft carriers, the Strategic Defense Initiative (SDI), and a host of other programs. The B-2 Stealth bomber, a priority USAF program, may cost more than $500 million per plane. The Navy's new Arleigh Burke-class destroyer will cost $750 million each and its SSN-21 Seawolf attack submarine as much as $1.7 billion each.[16] The Army has the Forward Area Air Defense System (FAADS) for about $11 billion and the LHX light attack helicopter for another $30 billion overall.[17] Strategic sealift procurement faces the same competition.

With the likelihood of zero percent real growth in future DOD budgets, improvements in strategic airlift and sealift will be difficult to achieve if priorities and strategies do not change. But the changes, themselves, can be disastrous. The Gramm-Rudman law mandates automatic spending cuts to reduce the Federal deficit. If this were to happen, approximately $15 billion would be cut from Pentagon outlays and as much as $30 billion out of Pentagon budget authority, which determines future spending. This would gut all services.[18] Mandated cuts would force the Air Force to cannibalize aircraft for spare parts, some very capable Navy ships would be mothballed or restricted to port, and spending levels for training pilots, sailors and Infantry soldiers would be cut back significantly.[19] Rep. Les Aspin, D-Wis., has proposed another solution.

> "Cutting readiness may be the smartest thing to do. Reductions in short-term readiness could be made by transferring more Army and Air Force units from the active force into the reserve, reducing the manning levels and supplies on hand to selected active-duty units while leaving a few units fully combat ready to respond to emergencies, and reducing flying hours for military aircraft, steaming time for ships and exercises for ground troops".[20]

What impact will warming U.S./Soviet relations have on the Defense Department and military strategy? What impact will Soviet General Secretary Gorbachev's new initiatives - "democratization" of the Communist Party and Soviet society, "perestroyka" (restructuring) of the Soviet economy, and "glasnost" (openness), have on our allies and Soviet force structure?[21]

In his 7 December 1988 speech before the United Nations General Assembly and a worldwide television audience, Mikhail S.

Gorbachev announced a unilateral Soviet troop withdrawal of 50,000 soldiers and 5000 tanks from Eastern Europe by 1991.[22] This withdrawal, the equivalent of six tank divisions together with their assault-landing and assault crossing support units and equipment, was part of a larger reduction of 500,000 men, 10,000 tanks, 8,500 artillery systems, and 800 combat aircraft in the Soviet military.[23] Shortly after Gorbachev's announcement, Poland's Defense Minister, Florian Siwicki, announced a decision to scale back their 400,000 strong military force.[24] On 18 January 1989, the Soviet leader announced that he would cut the Soviet defense budget by 14.2 percent, and the production of military equipment by 19.5 percent.[25] On 23 January 1989, East Germany announced it would reduce its armed forces by 10,000 troops and trim defense spending by 10 percent in 1990.[26]

Needless to say these announcements immediately made headlines. Worldwide speculation and an international debate began immediately as to what impact the announcements would have on NATO, the U.S. defense budget, and bringing our divisions home from Europe. Some examples:

> "General Edward C. Meyer said in an interview that a combination of events will force President-elect Bush to withdraw significant numbers of troops in his first term." "Meyer argued that the first significant withdrawal of thousands of America troops from Europe since World War II is inevitable for several reasons: Gorbachev's promise to reduce his armed forces by 500,000 troops and to withdraw 5,000 tanks from Eastern Europe; the strained economies of the United States and the Soviet Union; allied demands for mutual troop reductions; and the coming dip in the youth populations of NATO and Warsaw Pact countries. That is why we should plan for it now."[27]

"Rep. Patricia Schroeder (D-Colo.) cites one Pentagon estimate that 60 percent of its budget goes for the 337,000 soldiers, sailors, airmen and Marines in Western and Southern Europe, or about $180 billion of the current $300 billion defense budget"[28]

"Gen. Andrew P. Goodpaster said: If a so-called zone of confidence does develop in Europe, this will require us to go back to the drawing board and rethink what we're doing tactically, operationally and strategically. The United States is faced with a dual problem as a result of Gorbachev's initiatives - we have to prepare ourselves to respond and at the same time keep the alliance powerful."[29]

"Air Force General Russell E. Dougherty, former NATO planner and chief of staff said: If he can reduce, we can reduce, and we can withdraw, which would throw a bigger load on our mobile air-sea forces."[30]

"Air Force Gen. John W. Yogt, previous NATO air commander, agreed that Gorbachev and U.S. money problems are bringing pressure for change in American forces in Europe. The zone of confidence is a fraud because Soviet forces after withdrawing eastward from the NATO front could easily move back covering 100 miles a day."[31]

Randolph Ryan, a writer for the Boston Globe, states: "The sad fact that has become apparent in the Gorbachev era is that the West has counted on the Cold War to justify the huge growth of the national security state, which undermines democracy; military Keynesianism, which is devastating the American economy; the theory of nuclear war-fighting, which for years has displaced the concept of military sufficiency that Gorbachev is advancing; and sponsorship of anticommunist regimes with political values and human rights records.[32]

John Lehman, former Secretary of the Navy, had some advice in his new book, Command of the Seas: "We do not need 18 active and 10 reserve Army divisions; the ratio should be the reverse. Instead of a 600-ship Navy of 550 active and 50 reserve ships, the ratio should be 450 active and 150 reserve. We do not need two-thirds active wings and one-third reserve wings in the Air Force but, rather, closer, to half and half. Instead of five active division equivalents in the Marine Corps (officially there are only three divisions) and one in the reserve, the ratio should be three active and three reserve."[33]

Depending on what tanks are reduced, whether or not they are

destroyed or moved, and how the reductions will be monitored and verified, the general consensus is some changes will be made at some point in the future. Planning needs to start now.

What impact will the Conventional Armed Forces in Europe (CAFE) talks[34], which are tentatively scheduled to begin in Vienna on 9 March of this year, have on Army force structure?[35] Two years ago, Sen. Sam Nunn, D-Ga., the chairman of the Senate Armed Services Committee, called for verifiable and asymmetric U.S. and Soviet troop withdrawals from Central Europe:

> "The U.S. would withdraw two-plus of its Army divisions from the Federal Republic of Germany, and the Soviets would withdraw 13-plus divisions from East Germany, Poland and Czechoslovakia. That would represent an equal reduction by 50 percent of the forward forces each superpower now has in place. Second, the superpower ground forces so removed should be pulled back to locations that would require equal time to return to their forward positions".[36]

Can the U.S. meet the test of returning to forward positions in "equal time"? Do we really want to reduce our heavy division force structure if heavy divisions are withdrawn from Europe? The Pentagon's current position is that U.S. ground forces in West Germany should not be reduced by more than a single division, 18,000 soldiers.[37] These are tough questions, but they must be answered. Again, planning needs to start now, so if the questions become a reality, the right action will take place.

Will we be able to forward base our forces in the future and will we be able to afford it? Estimates on the cost of maintaining forces in Europe vary. Rep. Schroeder's estimate is one. At one time the Pentagon submitted annual reports on the subject, estimat-

ing the cost in 1982 at $123.3 billion, or 56 percent of the U.S. defense budget.[38] A 1985 Department of Defense study calculated that the cost of housing, schooling, medical care and other overseas costs-of-living amounted to $2 billion a year for all dependents in Europe.[39] As Western Europe moves toward full economic integration in 1992, many Americans will feel that Europe, with a greater combined gross national product and population than the United States, can assume more of the burden for their own defense. The table at Appendix 1 reflects America's burden and the Allied advantage by comparing defense and trade disparities.[40] The cost of maintaining forces around the world is very significant and will continue to rise. More than a quarter of all U.S. forces are stationed overseas, and the U.S. pays its allies a total of $2 billion a year (this figure may be low) for rights to overseas bases.[41] As base rights leasing agreements are renegotiated, the costs will only keep rising.

Besides the costs and associated pressures on the DOD budget, foreign attitudes toward U.S. forces are beginning to soften. Public support for defense measures in Germany, which hosts some 5,000 large and small military exercise each year and whose country echoes with the noise of low flying military aircraft, is falling.[42] It declines further with each plane crash. The "Green Party" in Germany has been very active and has been successful in reducing U.S. range firing, maneuver training, and low level flying. France refused to permit overflight rights during the Libyan bombing raid. During recent renegotiation of basing agreements, Spain insisted

that a wing of 72 F-16 fighters be moved elsewhere and a U.S. Air Force base be closed.[43] In Greece, the socialist government of Andreas Papandreou notified Washington that it would not renew its 1983 basing agreement and is insisting that a USAF base near Athens be shut down.[44] The stationing of troops in Korea has sparked violent student demonstrations. The Philippine government is making it very expensive to maintain naval and air bases in their country. U.S. forces are scheduled to depart Panama in the 1990s. If conventional arms reduction talks are successful and U.S. - Soviet relations do improve, the U.S. could lose many of its foreign bases. **Can we have a forward defense strategy without foreign bases and forward deployed forces?**

PURPOSE

This paper will attempt to answer these questions and propose a two part alternative to the strategic deployment problem the Army is facing in regards to its heavy divisions.

OVERVIEW

Chapters in this paper briefly examine the future threat, and what strategic, operational and tactical implications are expected to evolve from this threat. An alternative to today's heavy division structure - Armored Battle Groups is examined together with a different strategic deployment concept - Battle Group POMCUS Ships (BGPS). Training, sustainment and operational readiness issues concerning these two concepts are examined. The last

chapter provides recommendations and conclusions.

ENDNOTES

1. U.S. Department of the Army, Field Manual 100-1: The Army, (Washington: Department of the Army, 29 August 1986), p. 1, (hereafter referred to as "FM 100-1").

2. The White House, National Security Strategy of the United States, (Washington: White House, January 1988), p. 3.

3. Ibid., pp. 3-4.

4. The Joint Staff, United States Military Posture for FY 1989, (Washington: U.S. Department of Defense, 1988), p. 2.

5. Morrison, David C., "Fortress Europe - Who Should Pay For Its Defense?", Government Executive, February 1989, p. 20 (hereafter referred to as "Fortress Europe").

6. U.S. Department of the Army, The United States Army Posture Statement FY89, (Washington: Department of the Army, 1988), p. 2.

7. Ibid., p. 51.

8. Ibid., iii.

9. Ibid., p. 3.

10. Ibid.

11. U.S. Department of the Army, Army Long-Range Planning Guidance 1998-2008, (Washington: Department of the Army, 1988), p. 13, (hereafter referred to as "ALRPG").

12. Ibid., Appendix A, p. A-3.

13. Barry, John and Tom Morganthau, "The Defense Dilemma", Newsweek, 23 January 1989, p. 15 (hereafter referred to as "The Defense Dilemma").

14. Ibid.

15. Ibid.

16. Ibid., p. 17.

17. Ibid.

18. Pasztor, Andy and John E. Yang, "Bush Budget Aide Hints at Willingness to Accept Deep Cuts in Defense, Worrying Pentagon Brass", The Wall Street Journal (New York), 13 January 1989, p. A14.

19. Ibid.

20. Maze, Rick, "Aspen: Cutting Readiness May be Smart Way to Cut Costs", Army Times (Washington), 23 January 1989. p. 4.

21. Carlucci, Frank C., Secretary of Defense, Annual Report to Congress, FY 1989, (Washington: U.S. Government Printing Office, 1988), p. 23.

22. Whitney, Craig R., "For NATO, Gorbachev's Overture Has Drawbacks", New York Times (New York), 18 December 1988, p. 2E.

23. Ibid.

24. United Press International, "Poland to Cut Military, Defense Minister Says", Washington Post (Washington), 9 January 1989, p. A15.

25. Quinn-Jude, Paul, "Military Faces a New Foe: Criticism", The Christian Science Monitor, 3 February 1989, p. 3.

26. McCartney, Robert J., "East Germany to Reduce Its Armed Forces. Honecker Urges Other European States to Consider Similar Cuts", Washington Post (Washington), 24 January 1989, p. A1.

27. Wilson, George C., "U.S. Answer to Soviet Military Cuts Weighed - Withdrawing Some GIs, Reassessing Forward Strategy Among NATO Experts' Ideas", Washington Post (Washington), 3 January 1989, p. A4.

28. Ibid.

29. Ibid.

30. Ibid.

31. Ibid.

32. Ryan, Randolph, "Your Move, U.S.", Boston Globe (Boston), 12 December 1988, p. A7.

33. Grier, Peter, "Outspoken Lehman Urges a Smaller Pentagon", The Christian Science Monitor, 27 January 1989, p.7.

34. The CAFE Talks have replaced the Conventional Stability Talks (CST) and the Mutual and Balanced Force Reduction (MBFR) Talks which began in 1973 and achieved virtually no progress.

35. McCartney, Robert J., "East, West Set New Arms Talks - Conventional Forces Mandate Clears Way For Rights Pact", Washington Post (Washington), 15 January 1989, p. A1.

36. Summers, Harry, "U.S. Must Be Wary of Gorbachev's Gifts", Defense News, 23 January 1989, p. 35.

37. "Fortress Europe", p. 20.

38. Ibid.

39. Halloran, Richard, "Army Weighs Shorter Troop Tours", The New York Times (New York), 18 December 1988, p. 34.

40. "Fortress Europe", p. 20.

41. "The Defense Dilemma", p. 18.

42. "Fortress Europe", p. 20.

43. Ibid.

44. Walcott, John and Robert S. Greenberger, "New Strains Beset U.S.-Greek Relations as Negotiations on Bases Get Under Way", The Wall Street Journal (New York), 13 December 1988, p. A17.

CHAPTER II

THREAT IN THE 21ST CENTURY

> "Our time will come in 20 or 30 years. To win we shall need the element of surprise. The Bourgeois will have to be put to sleep, so we shall begin by launching the most spectacular peace movement on record. There will be electrifying overtures and unheard-of concessions. The capitalist countries, stupid and decadent, will rejoice in their own destruction. They will leap at another chance to be friends. As soon as their guard is down, we shall smash them with our clenched fist."
>
> D. Mauilisky
> Lenin School of Political Warfare, 1931[1]

SOVIET UNION AND WARSAW PACT

Regardless of whether or not Gorbachev's peace initiatives and unilateral troop reductions are successful, Soviet military power in the 21st century will be greatly enhanced. In the short term, the unilateral reductions have the potential to create a stronger, more modern Soviet military - funded with the savings generated from cuts in troops and tanks.[2] If "perestroyka" and "glasnost" are successful and if the Soviet economy does improve, Soviet military power will be even more enhanced in the long term. Soviet forces will be better trained and equipped, with far greater combat power than they currently have. The Soviet Union will remain the most dangerous threat to the United States, and they will maintain their emphasis on combined arms land power.

If Gorbachev's unilateral troop withdrawal from Eastern Europe takes place, it will be an important step in reducing East-West tensions, but it will not be a significant step toward reducing the

potential Soviet threat due to the calculus of land warfare. An attacker is generally considered to have the advantage over the defender if he can generate a combat power ratio greater than 3 to 1. Less than 3 to 1 favors the defender. During the Soviet "Vistula-Oder Campaign" on the Eastern Front in January - February 1945, the Soviets enjoyed a 1.5 to 1 strategic advantage over the Germans in manpower and equipment. Based on this ratio, the Germans should have won the battle. However, the Soviets turned the 1.5 to 1 strategic ratio into a 3-5 to 1 ratio at the operational level of warfare and a 7-10 to 1 ratio at the tactical level, and swept the German Army from the battlefield.[3] Current conventional force ratios at the strategic level of warfare in Europe greatly favor the Soviet Union and the Warsaw Pact - 1.2 to 1 in manpower, 2.4 to 1 in tanks, 1.4 to 1 in armed helicopters, and 3 to 1 in artillery. These advantages can be multiplied greatly at the operational and tactical levels of warfare. For the Soviet threat to be reduced, significant reductions will have to be made in their force structure, particularly offensive weapon systems.

Soviet force combat development will continue to provide the assets and capabilities required to execute their concept of Theater Strategic Operations (TSO). This combined arms deep battle calls for continuous offensive operations on several fronts to seize objectives up to 1,200 kilometers deep in less than 30 days.[4] These objectives would most likely be ports, logistical bases, communication centers, and command and control facilities in NATO's

rear area.

> "The Soviets are focused on combined arms deep battle as their dominant principle of warfare in the future. The deep battle concept has expanded from narrow strikes deep into the enemy's rear to broad encirclements on front and multi-front levels, using army-wide mobile groups, and air assault and airborne operations. A combined arms maneuver group (OMG) will be task organized from the first and second echelon forces of the parent army or front employed in conjunction with multiple air assault brigades or corps".[5]

Soviet military leaders will work to solve their current weaknesses. The next century will see them with better, more accurate weapon systems, improved computerized and automated command, control, communications and intelligence systems, enhanced offensive air and air defense capabilities, and better logistical support and sustainment. Training improvements will be made - officer/leader training, field training, and simulation training. Doctrine and tactics will be improved and updated to counter Western advantages in high technology weaponry.

> "Many western analysts believe the Soviets are on the verge of restructuring their land forces, adding infantry to their armored divisions and motorized rifle divisions. The Soviets are calling this their "corps concept", but in truth it will make their basic divisional unit more like a U.S. armored or mechanized division. What the change really means is that the basic unit of Soviet military maneuver is growing larger and more versatile. As their tanks and artillery become more capable - and the Soviets have made strenuous efforts in recent years to upgrade both kinds of systems - the punch of Soviet units has been dramatically increased".[6]

A recent publication by the Soviet Army Studies Office at the U.S. Army Combined Arms Center entitled, "Soviet Force Structure in an Era of Reform" points out that the Soviets are moving away from their deeply echeloned force structure to form stronger,

shallower formations which can fight effectively and maximize the advantages of a nonlinear or fragmented battlefield. It also states that the Soviets will likely replace their tank armies with mechanized armies consisting of tank and mechanized corps which will perform the role of operational maneuver. Their future combined arms army will consist of a combination of tank corps, motorized rifle corps, mechanized corps and fortified regions depending on whether the army is configured for offensive or defensive operations.[7]

> "The basic building block for this newly emerging force structure will be tailored combined arms battalions, which may be termed -battalion tactical groups. These battalion groups will be organized around the nucleus of former tank and motorized rifle battalions, and they will include in their TOE those combined arms elements which formerly were attached to the battalions, plus any other elements which contribute to a better combined arms balance within the battalion. A third type of battalion group will emphasize heavy, relatively static antitank and artillery firepower supplemented by significant engineer obstacle-laying capability. The later, called a heavy weapons battalion, will provide the building blocks for fortification brigades and their parent fortified regions, while the tank and motorized rifle battalion tactical groups will provide the basis for the tank, mechanized, and motorized brigades of tank, mechanized, and motorized rifle corps."[8]

The postulated organization of these battalion tactical groups is shown at Appendix 2.

The use of space based systems to enhance ground combat capabilities will expand to provide better warning with near real-time information and synchronization of ground force actions.[9] We can assume that all aspects of electronic warfare (EW) will be greatly improved, and they will maintain their EW superiority. The

development of enhanced deep attack capabilities - precision guidance, automated target fire control, and conventional submunition engineering technologies will be combined to make conventional munitions almost as effective as tactical nuclear weapons.[10] All of these advances will make the electronic signature and size of today's heavy division a significant disadvantage on the future battlefield.

The Soviets can also be expected to improve their power projection capabilities by increasing the quantity and quality of their strategic airlift and sealift capabilities, increasing their access to facilities outside the Soviet Union, and deployment of additional aircraft carriers. This growing capability to project power outside of the Eurasian landmass will present new challenges for U.S. Army and joint planners.[11]

We can expect them to pass their current equipment to their client states and other Third World countries, as they bring new equipment into their inventory. Training teams and advisors will go with this equipment to insure the new owners are proficient in its use. Figure 1 shows a portion of the military equipment the Soviets exported between 1981 and 1986.[12] Besides military equipment, the Soviet Union will also use a variety of political and economic tools to extend their influence in Third World countries.[13] They can be expected to maintain a presence in Africa, Southeast Asia, and Cuba. Low intensity conflict in the 21st century will probably relate more to what we call mid-intensity today.

MAJOR SOVIET EQUIPMENT DELIVERED TO THE THIRD WORLD

1981 - 1986	NEAR EAST & SOUTH EAST	SUBSAHARAN AFRICA	LATIN AMERICA	EAST ASIA & PACIFIC	TOTAL
TANKS/SP GUNS	3,720	585	500	660	5,465
LIGHT ARMOR	6,975	1,050	200	660	8,885
ARTILLERY	3,350	1,825	800	530	6,505
SUPER SONIC AIRCRAFT	1,060	325	110	210	1,705
HELICOPTERS	635	185	130	75	1,025
SURFACE-TO-AIR MISSILES	11,300	2,300	1,300	375	15,275

Figure 1. Soviet Military Equipment Exports

THIRD WORLD MILITARY GROWTH

Today, many Third World countries have the very latest in military hardware and possess modern, capable armies. Six developing countries including Iraq, Syria and Libya each have more tanks than the U.S. Army divisions stationed in Europe.[14] More than a dozen developing countries have more than 1,000 main battle tanks, and a similar number has access to ballistic and cruise missile technology.[15] Many have even achieved a capability to produce arms for export.

Nuclear and chemical weapons proliferate. The Central Intelligence Agency has been trying to promote awareness to the growing danger of these weapons, estimating that some 20 countries are trying develop chemical weapons and that 10 are developing biological weapons.[16] Iraq is reportedly researching weapons that spread cholera and anthrax.[17] Even in the face of international opposition and pressure, Iraq used chemical weapons extensively against Iran and against its own Kurdish minority. Libya built a

plant to produce chemical weapons. Many other countries have joined the "chemical weapon club".

In 1988, Iran and Iraq battled with surface to surface missiles. Over 1,000 missiles were fired at each others cities in what became known as "the war of the cities".[18] Syria, Israel, Saudi Arabia and numerous other Third World states have missiles of even greater accuracy and destructive power. Exercet missiles have been used extensively and proliferate the Third World. Many of these same countries have the best tanks, artillery, armored personnel carriers, and aircraft that the United States and other Western Nations have ever produced and exported. Saudi Arabia recently signed a letter of agreement to purchase 200 Bradley fighting vehicles, perhaps the best armored infantry carrier in the entire world.[19]

Third World military growth will, without a doubt, continue to increase. Severe economic problems, fragile governments, and regional rivalries will continue to persist into the 21st century. The risk of potential U.S. Army involvement will be increased because of this regional instability, especially in the many non-democratic Third World countries hostile to U.S. interests.[20] These countries will also employ a much improved military capability.

TERRORIST THREAT

The terrorist threat has the potential to be much greater in the 21st century. Today, Libyan leader Moammar Gadhafi is supporting radical Palestinian, Japanese and the Irish Republican Army

terrorists with modern weapons, surface to air missiles, and tons of Semtex plastic explosive.[21] Chemical weapons in the hands of terrorists are a very significant threat. It is safe to assume that other terrorist mentors will rise up in the 21st century to continue Gadhafi's tradition. Although this will not be a direct threat to U.S. combat formations, it will be a threat to U.S. installations, military personnel and DOD affiliated persons. Since 1968, terrorists have killed 298 DOD personnel, injured 360, and attacked 221 facilities.[22] The Army will need to improve its security and ability to detect and counter the terrorist threat. We can hope that the future will be better, but the potential is there for it to be worse.

ENDNOTES

1. Buchanan, Patrick, "How Do We Test His Sincerity?", The Washington Times (Washington), 12 December 1988, p. D1.

2. Roth, Margaret, "Soviet Troop Cuts Could Vastly Change East - West Relations", Army Times (Washington), 19 December 1988, p. 24.

3. Information was obtained from a lecture given to students participating in the Advanced Warfighting Studies Program at the United States Army War College in 1989.

4. U.S. Department of the Army, The United States Army Posture Statement FY 89, (Washington: Department of the Army, 1988), p. 6, (hereafter referred to as Army Posture Statement FY 89).

5. U.S. Department of the Army, ODCSOPS, Mounted Warfare Study Group - 2004, Executive Summary, (Carlisle Barracks: U.S. Army War College, March 1988), p. 4 (hereafter referred to as MWSG - 2004).

6. Donnelly, Tom, "Pressure Building for West's Response to Gorbachev's Plan", Commentary, Army Times (Washington), 19 December 1988, p. 31.

7. Glantz, David M., COL, Soviet Force Structure in an Era of Reform, Soviet Army Studies Office, (Fort Leavenworth: U.S. Army Combined Arms Center, January 1989), p. 26.

8. Ibid., p. 27.

9. U.S. Department of the Army, Army Long-Range Planning Guidance 1998-2008, (Washington: Department of the Army, 1988), p. 3.

10. MWSG - 2004, p. 6.

11. Ibid., p. 2.

12. Army Posture Statement FY 89, p. 8.

13. MWSG - 2004, p. 4.

14. Vuono, Carl E., GEN, USA, "The United States Army Is a Strategic Force", Armed Forces Journal International, February 1989, p. 61.

15. Ibid.

16. Ottaway, David B., "Probe Begins on Whether Iraq Got Deadly Bacteria From U.S.", Washington Post (Washington), 29 January 1989, p. A34.

17. Engelberg, Stephen, "Iraq Said to Study Biological Arms", The New York Times (New York), 18 January 1989, p. A7.

18. Ottaway, David B., "Middle East Weapons Proliferate", Washington Post (Washington), 19 December 1988, p. A1.

19. "Saudia Arabia to Purchase Bradley Fighting Vehicles", Defense News, 16 January 1989, p. 19.

20. The Joint Staff, United States Military Posture for FY 1989, (Washington: U.S. Department of Defense, 1988), p. 7.

21. "Middle East Weapons Proliferate", p. A1.

22. Army Posture Statement FY 89, p. 8.

CHAPTER III

FUTURE STRATEGIC, OPERATIONAL AND TACTICAL IMPLICATIONS

STRATEGIC IMPLICATIONS

A recent report by the Pentagon Commission on Integrated Long-Term Strategy, which included Henry Kissinger and Zbigniew Brezinski, stressed the need for flexibility in the U.S. defense posture.[1] It concluded that "the Pentagon must give preference to more mobile and versatile forces - forces that can deter aggression by the ability to respond rapidly and discriminately to a wide range of attacks".[2]

Planning for our number one mission - the defense of Western Europe is a function of our ability to move vast amounts of men and equipment across the Atlantic within thirty days of an outbreak of hostilities.[3]

> "This means the Navy must build a fleet of fast transport ships and the Air Force must build a fleet of big transport aircraft - but neither has done so. One reason for that failure is the fact that neither service puts much priority on the unglamorous chore of providing transportation for the Army. In any event, it is a matter of record that the U.S. Joint Chiefs of Staff admitted last December they could not possibly meet the objective of deploying six U.S. divisions to Europe within 10 days of the outbreak of war. As a result, the chiefs said, NATO would almost certainly be forced to use nuclear weapons about seven days into the war."[4]

Army Long Range Planning Guidance states that the Army must have the ability to conduct sustained, joint and combined operations across the full spectrum of conflict at all levels of war, and must have the ability to deploy a force capable of achieving

decisive results in a timely manner.[5] What does this guidance and the increased future threat capability mean to the U.S. Army in planning for the 21st century?

First, the Army must respond to future threat developments by capitalizing on enhancements to U.S. capabilities and by adjusting unit size, tactics and deployments in order to reduce vulnerability to improved threat targeting and emerging direct and indirect fire technologies.[6]

Second, the Army must find a strategic deployment concept that will allow it to quickly deploy modernized, heavy forces to counter a threat anywhere in the world and to do it from bases located in the United States. Deploying light Infantry divisions (some of our very best Infantry soldiers) with their lack of combat power, fire support, sustainability, mobility, and protection is a risky proposition. There are some situations and environments today where these divisions could be deployed and operated successfully. However, future advances in Soviet and Third World capability and military power will cause these divisions to be susceptible to significant personnel casualties. These casualties would have a very negative impact on public opinion. Once public opinion turned against the war, the accomplishment of national objectives could be put at risk.

The reality of this ongoing argument is that Airborne, Air-mobile, and Mechanized Infantry can accomplish the light Infantry mission by deploying minus some of their heavier equipment. The Infantry training problems can be solved. Probably one of the

reasons behind the decision to form light divisions was the desire to increase force structure. A secondary reason was the lack of strategic airlift assets. If pressure is put on the Army's force structure due to budget cutbacks and conventional arms reduction talks (which is very likely), we need to look closely at reducing our light force structure before we decide to eliminate some of our heavy force structure which will be more capable and flexible against the future threat.

If you add to this the strategic deployment advantages the Soviets would gain from a significant reduction in conventional forces in Europe, our strategic deployment problem becomes even more severe. Soviet forces can be withdrawn into Russia and still be redeployed back into Europe quickly using ground transportation assets. U.S. forces on the other hand would be withdrawn back to CONUS. Redeployment back to Europe would take a great deal of time, particularly with the strategic deployment assets currently available. See Figure 2.[7]

Many would say that Pre-positioned Material Configured to Units Sets (POMCUS) has solved this problem and with prepositioned equipment the U.S. would only have to airlift soldiers back to Europe. Will future conventional arms agreements allow this option to the U.S.? If the situation were reversed, would we allow the Soviets to pre-position an Armored Corps plus worth of equipment in East Germany? Or better yet, will our European allies allow the positioning of POMCUS stocks on their soil after a conventional arms treaty is signed, given the current activities of the "Green

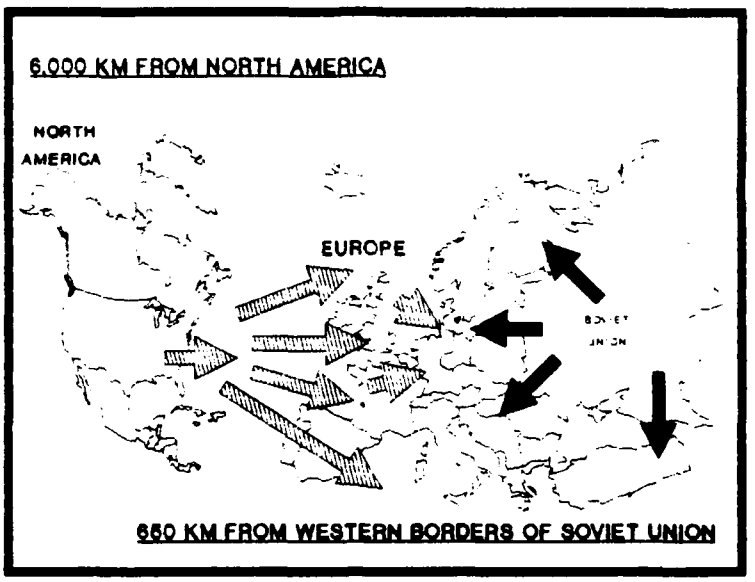

Figure 2. NATO - Warsaw Pact Reinforcement

Party" in Germany and the actions of Spain and Greece in regards to U.S. bases? It is already very expensive for the U.S. to lease bases throughout the world to support our forward defense strategy, and these costs will only increase in the future.

OPERATIONAL IMPLICATIONS

Third, the large heavy division in today's Army may not be the appropriate formation on the future battlefield. The signature of this division on today's battlefield is great. Future combat involving state-of-the-art forces will feature continuous operations by smaller, more capable, self-sustained formations, increased unit mobility, agility and organic firepower, and improved command and control.[8] Highly accurate anti-personnel and anti-armor weapons with extended ranges will proliferate. Improved

reconnaissance and target acquisition will lead to increased use of maneuver by fire. The ability to locate and hit moving and stationary targets in the depth of the battlefield, and the ability to track maneuver formations even when they are not in contact and to counter them with effective fires, will change the nature of maneuver at the operational level.[9] In order to improve its ability to maneuver on the future, fragmented battlefield, the Army will require highly agile and mobile, close combat forces - Armored Battle Groups.

These battle groups would be similar to one of today's Separate Mechanized or Armor Brigades and would consist of: a balanced combination of Armored Infantry battalions and Armor battalions, other combat elements - artillery, engineer and attack helicopter units, combat support elements - signal, chemical, military intelligence and military police units, and combat service support units - forward support battalion with supply, medical and transportation assets. Each of these battle groups would be capable of independent and combined operations for sustained periods of time. Chapter 4 of this paper provides additional details on the structure and organization of this battle group concept.

Two or three Armored Battle Groups could be combined with a "tactical" division headquarters to form an Armored Division or Armored Infantry Division. Two or more of these divisions could form an Armored Corps. Combat support and combat service support elements would not be a separate component (or very limited) at

division level, but would be at Corps level. National Guard and Army Reserve force structure could mirror the same organization.

TACTICAL IMPLICATIONS

The tactical implications of the 21st century threat impact on all seven battlefield functional mission areas: maneuver, intelligence, fire support, air defense, countermobility and survivability, combat service support, and command and control (friendly and enemy perspective).

Maneuver. Airland Battle doctrine will continue to be maneuver based and combined arms oriented.[10] Future improvements in the speed, operational range, endurance, and agility of armored forces will permit tactical and operational level commanders to achieve timely positional advantages over threat forces before they can react. Future maneuver units equipped with long range, high rate, direct fire weapons will extend the area dominated by their defensive fires. These same weapons in the offense will allow supporting units to destroy enemy weapon systems well before the friendly assault units close on the objective. On future battlefields, armored units will continue to be the only units capable of quickly seizing key areas and denying their use to the enemy.[11]

Intelligence. Intelligence collection systems and activities (overhead, surface and electronic) will be much improved. These improvements together with improved, automated and computerized data distribution systems will provide near real time or even real time intelligence to future maneuver commanders. These improve-

ments will place a premium on smaller, more maneuverable armored combat formations, advanced communication systems, and deception plans.

Fire Support. Indirect fire support will continue to be the most responsive and flexible means for a future commander to apply combat power across the full spectrum of his area of operations.[12] The ability to mass and concentrate fires will be improved. High volume, long range, and precision guided conventional munitions (anti-personnel and anti-armor) will have the ability to devastate units long before they come into contact. These developments will continue to place a premium on smaller, more mobile, self-contained armored formations.

Air Defense. Future air defense systems will provide area and point protection for combat formations and military installations. Stand-off ranges will be increased. Non-line-of-sight weapon systems and improved C3I will engage aircraft before they are in range of their targets. Air defense units must be as mobile and versatile as the formations they protect, and they must be responsive to the formations they are protecting.

Countermobility and Survivability. Improvements in threat mobility and sophisticated weaponry will be countered with improved combat engineer organizations and equipment. Minefields will be emplaced very quickly. Likewise, they must be detected and breached just as quickly. The future commander can not afford to be stopped in front a enemy's minefield. Survivability of equipment and personnel on the future battlefield will dictate that future

digging equipment build emplacements in shortened time frames throughout the depth of the battlefield. Engineer organizations will be a critical component of the maneuver organizations they support and must be responsive to that organization's commander.

Combat Service Support. Combat service support will be critical to sustained and continuous operations on future battlefields. Support organizations must be manned in peacetime to support 24 hour operations in combat. We must be prepared to win the first battle from a logistics standpoint. Logistical organizations will be located in rear areas, but will still be susceptible to accurate, long range enemy fire. They must be provided resources to defend themselves and their immediate area of operations. Support vehicles must match the mobility of the maneuver formations they are supporting. Stockage of critical supplies and repair parts should support continuous operations for 30 days and should be mobile. Class III and V stocks should support continuous operations for 96 hours and be mobile. At least 60 days of resupply should be immediately available within the theater of operations. At least six months of resupply should be available within the supply system. Lastly, support organizations must be responsive to the organizations they are supporting.

Command and Control. Future battlefield command posts must be smaller, more mobile, and afford some protection against indirect fires and chemical weapons. Electronic warfare (EW) signatures must be minimized. Battle staffs will utilize advanced communications and automatic data processing equipment and rely

extensively on airborne sensors.

ENDNOTES

1. Bresler, Robert J., "State of the Nation - Defense Strategy for the 1990's", USA Today, January 1989, p. 7.

2. Ibid.

3. Barry, John and Tom Morganthau, "The Defense Dilemma", Newsweek, 23 January 1989, p. 15.

4. Ibid.

5. Army Long Range Planning Guidance, p. 9.

6. Ibid., p. 3.

7. The Joint Staff, United States Military Posture for FY 1989, (Washington: U.S. Department of DEfense, 1988), p. 21.

8. Army Long Range Planning Guidance, p. 6.

9. Ibid., p. 6.

10. U.S. Department of the Army, Training and Doctrine Command, Airland Battle - Future (Heavy) 2004, Operational Concept for U.S. Heavy Forces, Final Draft, (Fort Monroe: HQ, TRADOC, 10 Jan 1989), p. E-1.

11. Ibid., p. E-2.

12. Ibid., p. E-3.

CHAPTER IV

ARMORED BATTLE GROUPS

NEED FOR HEAVY FORMATIONS

The 21st century threat, and the strategic, operational and tactical implications of that threat clearly make a strong case for not reducing our heavy force structure. The mobility, firepower and technological expansion capacity and potential of our heavy divisions are unlimited. This is not to say that improvements can not be made in the heavy division structure. The most significant problem, now and in the future, is the timely strategic deployment of this division to where it is needed. The high cost of strategic lift assets, future budget constraints, reduced defense spending, and competition between the services will make solving this deployment problem even more difficult in the future.

However, there are some things that can be done now and in the future to fix the deployment problem. Chapter 5 outlines a new deployment concept based on the Armored Battle Group structure described in this chapter. Together, these concepts will enable the Army to project land combat power worldwide.

One of the biggest drawbacks of the current heavy division structure is its size. The signature of this division on today's battlefield, as has already been mentioned, is very great, and this will be a significant disadvantage in the future. Maneuver brigades, in order to accomplish their missions, are dependent on other combat support and service support units in the division.

In combat, a maneuver brigade is tasked organized based on Mission, Enemy, Terrain and Time (METT). Routinely, the following elements are either attached or in direct support of the brigade: Field Artillery Battalion, Forward Support Battalion, Combat Engineer Company, Signal Platoon, Military Police Platoon, Ground Surveillance Radar Section/Platoon and other elements from the Military Intelligence Battalion, and perhaps, some Air Defense Battalion and Attack Helicopter Battalion elements.

The current structure forces the maneuver brigade commander to fight with elements which are not organic to his organization. The brigade commander can train in peacetime with his combined arms organization. However, very often this training is inadequate to maintain a truly combat ready organization. There are many reasons for this - lack of brigade and division level field training exercises, conflicting training schedules and priorities, and limited training facilities and resources, to name a few. We often say that "we must train the way we will fight". Why not organize and train the way we will fight? Since we are oriented toward the 21st century, why not start with a blank piece of paper, assume an unconstrained environment, and build a flexible, versatile combined arms organization which can operate and sustain itself independently or as part of a division or corps, fight both Airland Battle 21 and Airland Battle Future operational and doctrinal concepts, and be ready to win the first battle?

THE ARMORED BATTLE GROUP

Figure 3, Armored Battle Group (ABG) Organization, provides an overview of an organization that will provide the versatile and highly mobile, combined arms force we will need in the future. The ABG consists of a Battle Group Headquarters (Figure 4) and Headquarters Company, two Armor Battalions (AB), two Armored Infantry Battalions (AIB), one Field Artillery Battalion (FAB), one Attack Helicopter Battalion (AHB), one Forward Support Battalion (FSB), one Close Combat Battalion (CCB), and one Combat Support Battalion (CSB). The organization of each of these sub-elements is described in subsequent sections of this chapter.

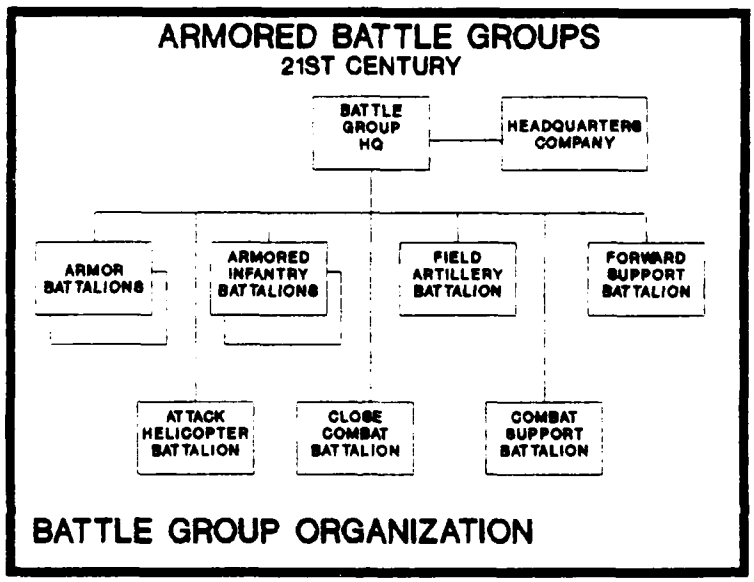

Figure 3. Armored Battle Group Organization

To increase combat power, the Armored Battle Group has a balance between Armor Battalions and Armored Infantry Battalions (refer to Figures 5 and 6 for detailed organization of these battalions). Having two of each type provides the ABG commander with more flexibility in task organizing his fighting units and operating independently on the future battlefield. In defensive operations, he has the capability to deploy three task forces forward along the FEBA, and one pure armor battalion or another task force in reserve. The additional battalion would also be available help him fight his rear area battle, something he is not able to realistically accomplish with the current brigade structure. The rear area battle will be even more important on the future battlefield given the Soviet concept for Theater Strategic Operations (TSO). He would also have more flexibility in offensive operations. He could move on one axis with sufficient forces to have forward, flank and rear protection and security - a must in executing the deep penetrations behind enemy lines dictated by Airland Battle Doctrine. He could move on two or three axes with a balance of forces between them and still have enough combat power to weigh his main effort.

Having two Armored Infantry Battalions provides the ABG commander with more Infantry soldiers - extremely important in defending key terrain, in assaulting and clearing defended positions, built-up areas and wooded terrain, and in providing security for maneuver, obstacles and periods of poor visibility. Armored and mechanized operations at the National Training Center (NTC) and in

Europe have consistently pointed to the need for more infantry soldiers on today's battlefield and the same will be true on the future battlefield.

The requirement for a Field Artillery Battalion is pretty straight forward. See Figure 7 for changes in battalion organization. The same is true for the Forward Support Battalion which provides the maintenance, medical, transportation, and supply support for the ABG. See Figure 9 for changes in the Forward Support Battalion structure.

The requirement for an Attack Helicopter Battalion is not as obvious. Although, the ABG commander will require close air support, given the current requirements and limited resources for USAF close air support and the likelihood of the same situation on future battlefields, it would be better if the ABG commander had his own aircraft assets in the form of attack helicopters. These aircraft would be responsive to his needs and would significantly increase the combat power of the battle group.

The Close Combat Battalion (Figure 10) is a new formation consisting of those task organized elements and units normally provided to the current brigade structure in a combat situation. The Combat Support Battalion (Figure 11) is also a new formation which consists of combat support and combat service support elements required to support the ABG and allow it to operate independently.

ARMORED BATTLE GROUP HEADQUARTERS AND HEADQUARTERS COMPANY

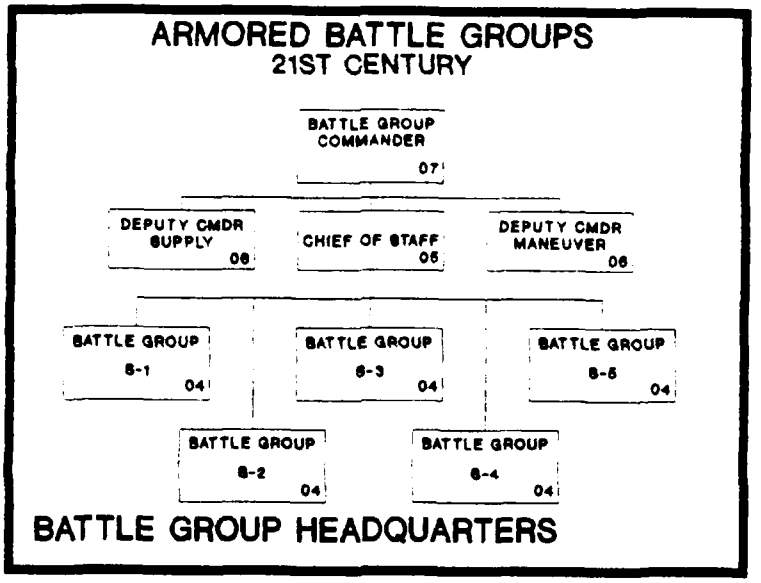

Figure 4. Armored Battle Group Headquarters

As reflected in Figure 4, the Armored Battle Group Headquarters is significantly different from the current brigade headquarters. This proposal calls for the ABG Commander to be a Brigadier General, similar to today's Separate Brigade or Forward Brigade commander. The Command Group would consist of the ABG Commander, ABG Deputy Commander for Supply, the ABG Deputy Commander for Maneuver, and the ABG Chief of Staff. The deputy commander positions and the chief of staff position would be Colonel billets. The requirement for the deputy commander positions is based on the size of the ABG, nine battalions versus the three in a brigade structure, and the requirement on future battlefields for continuous operations. Many of today's weapons have

the capability for day and night operation. This capability will be even greater on the future battlefield. However, current manning levels do not support continuous operations, especially in the leadership positions. The deputy commander and chief of staff positions in the ABG will go along way toward solving this problem.

The ABG Chief of Staff would supervise an expanded battle group staff consisting of: the ABG S-1 (Major), the ABG S2 (Major), the ABG S-3 (Lieutenant Colonel), the ABG S-4 (Major), and the ABG S-5 (Major). The ABG S-3 responsibilities justify the additional experience afforded by having a Lieutenant Colonel in the position. The ABG S-5 position supports the independent mission of the ABG.

Peacetime manning levels in all staff sections should support continuous operations (two or three shifts), and the operation of three command posts in combat: Tactical Command Post (TAC CP), Tactical Operation Center (TOC), and the Rear Tactical Operation Center (RTOC). Battle group staff sections would maximize the use of automatic data processing (ADP) equipment, the Automated Tactical Command and Control Systems (MCS) and the Army Data Distribution System (ADDS), and advanced communications to interface with improved airborne, automatic, computer-controlled electronic intelligence systems (Joint Surveillance and Target Attack Radar System, Quick Fix, Quick Look, and Improved Guardrail V).[1] They would also be equipped with improved armored/mobile command post vehicles allowing the staff to operate in an NBC environment, to operate on future maneuver battlefields, and to minimize the signature of their different command posts.

The ABG Headquarters and Headquarters Company, commanded by a Major, would be as small as continuous operations in combat would allow. There would not be any organic requirement for maintenance or signal platoons, as these functions would be provided by the maintenance contact teams in the Forward Support Battalion (FSB) and the Signal Company in the Combat Support Battalion (CSB).

Personnel administration functions for the ABG staff would be provided by the Personnel and Administration Company in the CSB. This company would support the requirements of both the ABG S-1 and S-5. The ABG S-2 would be supported by the Military Intelligence Company in the CSB, and the ABG S-4 would be supported by the FSB. The ABG S-3 would have the largest staff section and would be supplemented by functional representatives from the Field Artillery, Attack Helicopter, Close Combat, and Combat Support battalions (battlefield functional areas).

CHANGES APPLICABLE TO ALL BATTALIONS

To improve sustained, continuous operational capability on the future battlefield, the following changes are applicable to all battalions in the ABG.

(1) All Company Commander positions are upgraded from Captain to Major.

(2) All Company Executive Officer or Second-in-Command (2IC) positions are upgraded from Lieutenant to Captain.

(3) Peacetime manning levels in battalion staff sections and specialty platoons support continuous operations (two or three

shifts) and the operation of the Tactical Command Post (TAC CP), the Main Command Post (Main CP), and the Field and Combat Trains, as applicable, in combat.

(4) Battalion staff sections maximize the use of ADP equipment, MCS, advanced communications, and armored/mobile command post vehicles which allow them to operate in an NBC environment, to operate on future maneuver battlefields, and to minimize to signature of their different command posts and trains locations.

(5) Truck drivers are resourced in peacetime at 1.5 drivers per vehicle.

Upgrading the Company Commander and 2IC positions will go along way toward improving the ability of the company leadership level to conduct continuous operations. The increased maturity and experience gained is an added bonus as many of the companies, especially combat maneuver elements, are structured in this proposal with four platoons instead of the current three. The additional platoons provide additional combat power and the opportunity for continuous operations to be achieved at the soldier level - platoons rotated through rest periods. Having four platoons in each maneuver company also conforms with the "square" organizational structure of the maneuver battalions and the ABG - four maneuver battalions with four maneuver companies each.

Current resourcing of truck drivers in maneuver battalions, one driver per vehicle, is unacceptable. Even with a 100% fill in all positions, there is no flexibility in regards to losses. Ammunition, cargo and fuel trucks can not be left behind. The

current practice of pulling Bradley Infantrymen and tank crew members out of their fighting vehicles to drive battalion vehicles is not the right answer.

ARMOR BATTALIONS

Figure 5 depicts the organization of each Armor Battalion in the Armored Battle Group. This is basically the organization of the battalion in today's structure. One change not reflected is the absence of a Scout Platoon in its Headquarters and Headquarters Company. The Scout Platoons from the Armor and Armored Infantry

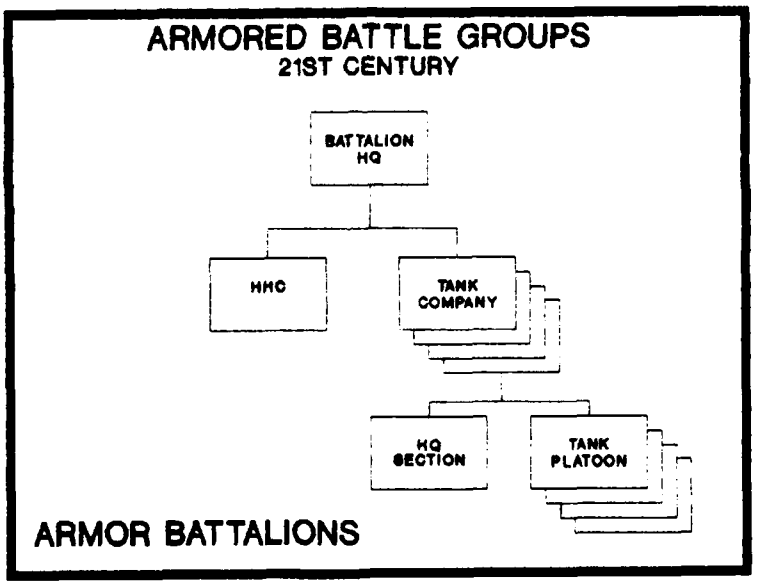

Figure 5. Armor Battalion Organization

Battalions are consolidated into a Reconnaissance Company in the Close Combat Battalion to provide close ground reconnaissance and counter-reconnaissance for the entire battle group, another important lesson learned from the National Training Center (NTC)

which is very applicable to the future battlefield. The Heavy Mortar Platoon is retained in the company.

The most pressing problems in the current Armor Battalion structure that need to be fixed in the ABG Armor Battalion are the size of its tank companies, the size of the maintenance and support platoons in its Headquarters and Headquarters Company, and its inability to conduct sustained, continuous operations both at the leadership level and the soldier level.

The current Tank Company is authorized only 62 personnel, of which 56 are required to man positions on its 14 authorized tanks. This leaves only six personnel to provide all of the other necessary company functions and drive/operate three authorized wheel vehicles (59 out of 62 personnel required to operate vehicles). The three remaining personnel are the company First Sergeant, Supply Sergeant, and the NBC NCO.[2]

A fully manned Tank Company has one "spare" tank crewman (SGT, 19K20). A Tank Company at 100 percent of authorized fill can absorb one personnel loss for any reason and fill that space. If the company is at less than 100% fill or has more than one loss, it can not operate its organic equipment to its full capacity.[3] Routinely, a Tank Company has 10 to 15 percent of its personnel missing for one reason or another (6 to 10 personnel). Can it achieve continuous operations on the future battlefield? It can not.

The problem is amplified when the Tank Company's crewmen are diverted to fill battalion vacancies as truck drivers (88M), fuel

handlers (77F), clerks (77L), automotive mechanics (63T), NBC NCCs (54B), PLL/TAMMs clerks (76C), armors/supply men (76Y), and field wiremen (31K).[4]

To fix these problems in the ABG Armor Battalion, five additional tank crewmen would be added to each Tank Company, along with replacing the one authorized 2 1/2 ton cargo truck and trailer with two 5 ton trucks with trailers (current company truck can not carry all of the company's TO&E equipment). To reduce the necessity of diverting tank crewmen from tank companies and to support the additional Tank Platoons (see next paragraph), three PLL/TAMMS clerks and six automotive/turret mechanics were added to the Armor Battalion HHC Maintenance Platoon; nine POL vehicle drivers and nine truck drivers are added to the HHC Support Platoon to provide 1.5 drivers per vehicle. Total personnel additions to each battalion for this change: 20 tank crewmen (19K), three PLL clerks (76C), six mechanics (63T), and 18 truck drivers (77F and 88M) for a total of 41 personnel.[5]

To provide for continuous operations in the Tank Company, an additional Tank Platoon has been added to each company, and the leadership positions have been upgraded. The additional platoon provides additional combat power for both offensive and defensive operations, and it would enable the Tank Company commander to always have at least one or two platoons in reserve during defensive operations. The reserve platoons would be in position to gain some extra rest. This change adds an additional 16 tanks and 64 personnel to each battalion.

Improvements to provide for continuous operations at battalion level, staff and specialty platoons, have already been addressed as a change common to all battalions in the ABG.

ARMORED INFANTRY BATTALIONS

Figure 6 depicts the ABG Armored Infantry Battalion organization. As in the case of the ABG Armor Battalion, the Scout platoons from both battalions have been dropped, and the personnel and equipment assets used to form the Reconnaissance Company in

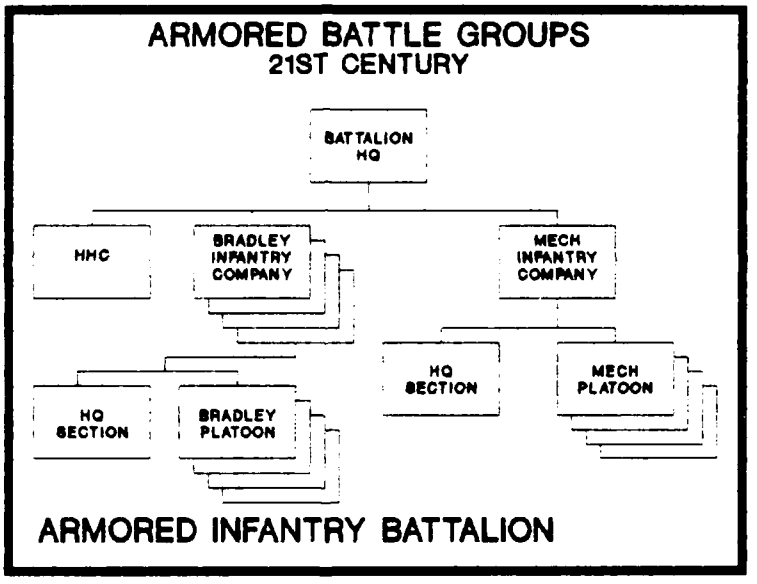

Figure 6. Armored Infantry Battalion Organization

the Close Combat Battalion. The same is true for the current Infantry battalion anti-tank companies. The personnel and equipment assets from these companies were used to form the Anti-Tank Company in the Close Combat Battalion. The Anti-Tank Company has been replaced by a Mechanized Infantry Company consisting of

four Mechanized Infantry Platoons. The primary reason for this change was to increase the quantity of Infantry soldiers in the battalion and to provide for continuous operations at company level.

The current Bradley Infantry Company is too undermanned to perform doctrinal missions both now and in the future, particularly those missions requiring dismounted Infantry combat. The company can not conduct sustained, continuous operations. The Company Executive Officer or 2IC has an armored personnel carrier (M113A3) in which to perform his missions, and the Company First Sergeant performs his resupply and administrative missions with a wheel vehicle. Neither of these vehicles has the mobility of the BFV, and the wheel vehicle would not be survivable on a modern battlefield.

At 100% fill, the company can dismount a total of 61 personnel including leadership. The company commander is required to operate on two FM radio nets, but his headquarters element has only one authorized radio operator, who is actually required to drive the company First Sergeant. The required radio operators are routinely taken from the rifle teams.

The three man Bradley Fighting Vehicle (BFV) crew can not efficiently operate the turret without a TOW loader being left on board when the rifle team dismounts, further reducing the dismount strength. Each Platoon Leader must leave one rifleman on his BFV to assist the BFV gunner with target acquisition when he dismounts from his vehicle. The result of all of these tactical requirements

is a reduction in dismounted strength from 61 to 46, with 12 of the 46 being officers and radio operators.[6]

The manning problem in the BFV company is further amplified in training and would be in combat, because rifle team members are diverted to fill battalion vacancies as truck drivers (88M), fuel handlers (77F), automotive mechanics (63T), NBC NCOs (54B), PLL/TAMMS clerks (76C), armorers/supply men (76Y), or field wire men (31K).

To improve the sustained, continuous operation capability of the Bradley Company, a fourth Bradley Platoon was added to each company. The company commander's position was upgraded to a Major's billet, and the 2IC's position to a Captain's billet. One command variant of the BFV with driver and gunner was added to the company headquarters element for use by the Company 2IC. The company commander is also equipped with a command variant of the BFV. One Staff Sergeant was added to the company headquarters to assist the Company 2IC in receiving, collating and sending reports and requests. The company headquarter's M113A3 Armored Personnel Carrier would be used by the company First Sergeant, taking him out of a soft vehicle. Two 5 ton cargo trucks with trailers replaced the two 2 1/2 ton cargo trucks and trailers in the company HQ Section to provide more lift for company TO&E equipment and supplies.

To fix the other shortages, three riflemen were added to each Bradley company headquarters - one Sergeant to act as a BFV Commander when the company commander dismounts, and two riflemen to

act as radio operators when the company commander dismounts. Three automatic riflemen were added to each platoon headquarters.

To reduce the necessity of having to divert riflemen from the Bradley companies to fill battalion vacancies and to support the increase in the number of Bradley platoons, two PLL/TAMMS clerks and six automotive/turret mechanics were added to the Battalion Maintenance Platoon. Eight truck drivers and five fuel handlers were added to the Support Platoon to provide 1.5 drivers per truck. The Support Platoon's 5 ton cargo trucks and trailers (cargo and fuel) were exchanged for HEMMIT cargo and fuel trucks, providing more capacity, flexibility and maneuverability for the battalion.

FIELD ARTILLERY BATTALION

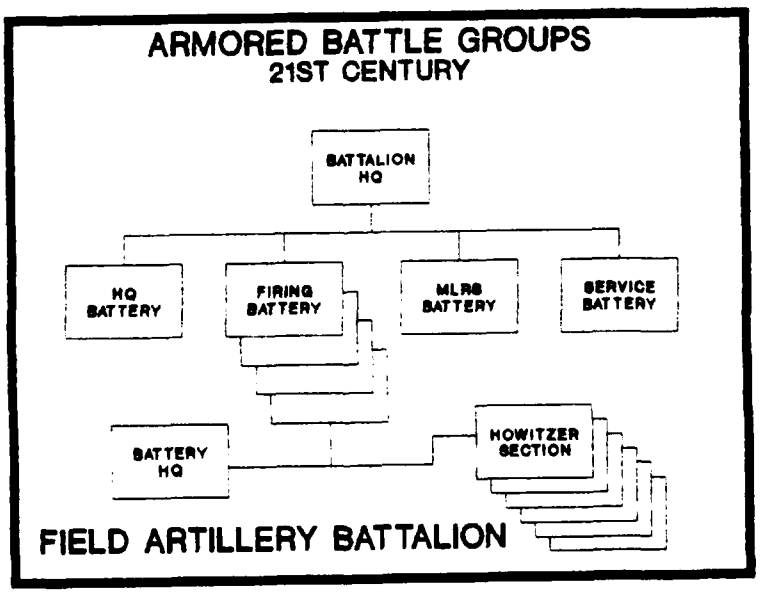

Figure 7. Field Artillery Battalion Organization

The ABG Field Artillery Battalion organization consists of seven batteries: Headquarters Battery, Service Battery, four Firing Batteries, and a Multiple Launch Rocket System (MLRS) Battery. The number of guns in the Howitzer platoons would remain constant. Common changes made to other battalions in the Armored Battle Group also apply to this battalion, although the artillery battalion is in pretty good shape as to manpower. Firing Battery commander and 2IC positions would be upgraded. Battalion staff and battalion Service Battery platoons would be flushed out to achieve continuous operations in combat and to maximize technological advancements. Peacetime truck driver resourcing would conform to the 1.5 to 1 ratio.

Future advances in mobile satellite communications, the Joint Surveillance and Target Attack Radar System (Joint STARS), the Quick Look System, the Improved Guardrail V System, and real time intelligence capability will significantly enhance the capabilities of the Field Artillery Battalion.

The MLRS Battery represents a change in the ABG Field Artillery Battalion. The purpose of putting this battery into the battalion is to increase the combat power of the Armored Battle Group and to help it operate independently on the future battlefield. The MLRS Battery would supplement the fires of the firing batteries and also provide counterfire and suppression of enemy air defenses. The MLRS Battery would also be useful to the ABG when it was executing a deep "thrust" in accordance with Airland Battle Future doctrine.

The other major change to this organization would be the addition of a Target Acquisition Platoon using the Firefinder System (AN/TPQ-37, Artillery/Rocket Locating Radar, and AN/TPQ-36, Mortar Locating Radar) and the Moving-Target-Locating Radar System - MTLR (AN/TPS-25A and AN/TPS-58) to the Headquarters Battery. Both of these systems would interface with the TACFIRE, provide target input to the MLRS Battery, and support the independent nature of the ABG.

ATTACK HELICOPTER BATTALION

Figure 8 depicts the organization of the Armored Battle Group's Attack Helicopter Battalion (AHB). This is basically the same organization found in a battalion supporting today's heavy division. The ABG battalion would be equipped with 19 Light Helicopters (LHX), 18 AH-64 (APACHE), and 8 UH-60 helicopters. The UH-60 Black Hawks represent a change to the current organization.

A Lift Platoon has been added to the Headquarters and Service Company to provide airlift assets for the AHB and the Armored Battle Group. This capability would be particularly advantageous: resupply of critical repair parts and ammunition, evacuation of critically wounded personnel, reconnaissance, and airmobile operations with dismounted Infantry units.

Six of the seven LHX aircraft in the Headquarters and Service Company would be used to form an Aerial Scout Platoon consisting of three sections of two aircraft each. The primary function of this platoon would be to provide aerial reconnaissance for the

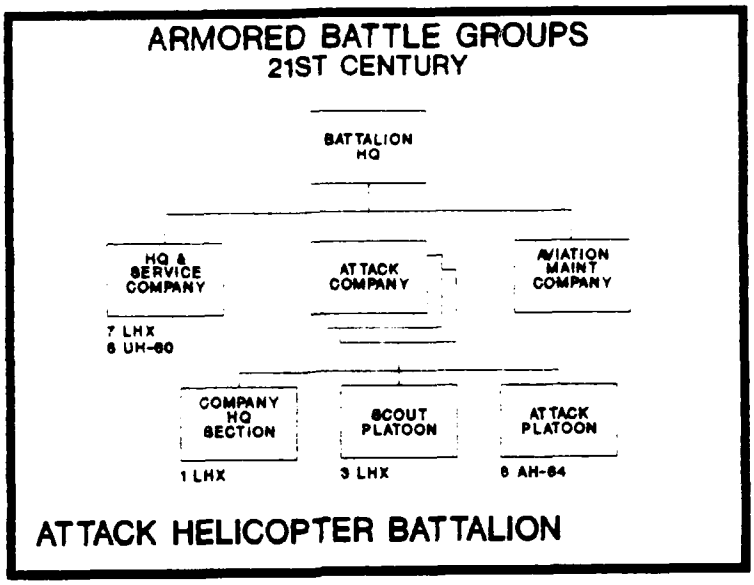

Figure 8. Attack Helicopter Battalion Organization

Armored Battle Group and would supplement the ground reconnaissance capabilities of the Reconnaissance Company in the Close Combat Battalion. The remaining LHX aircraft would be used by the Battalion Commander.

The current AHB is woefully under resourced in several manpower specially areas. These manpower shortages prevent the current battalion from achieving sustained, continuous operations. The most critical shortage exists in aircraft pilots. Army of Excellence (AOE) allocated approximately two pilots per aircraft. Given required crew rest regulations, the current battalion falls far short of a continuous operations capability. The ABG's AHB is resourced at 1.8 pilots per aircraft pilot and co-pilot seat which will maximize both the day and night capabilities of its assigned aircraft.

Support MOS strength throughout the battalion would be increased. Liaison Officers, Chemical Officer and a Fire Support Element were resourced for the battalion staff. The ability of the Headquarters and Service Company to transport bulk aviation fuel and ammunition would be increased. Changes common to the other battalions in the battle group were also applied, as applicable, to the Attack Helicopter Battalion.

FORWARD SUPPORT BATTALION

The Armored Battle Group's Forward Support Battalion, Figure 9, has been significantly expanded. The current FSB battalion is terribly under resourced, especially in the supply, maintenance and medical companies.

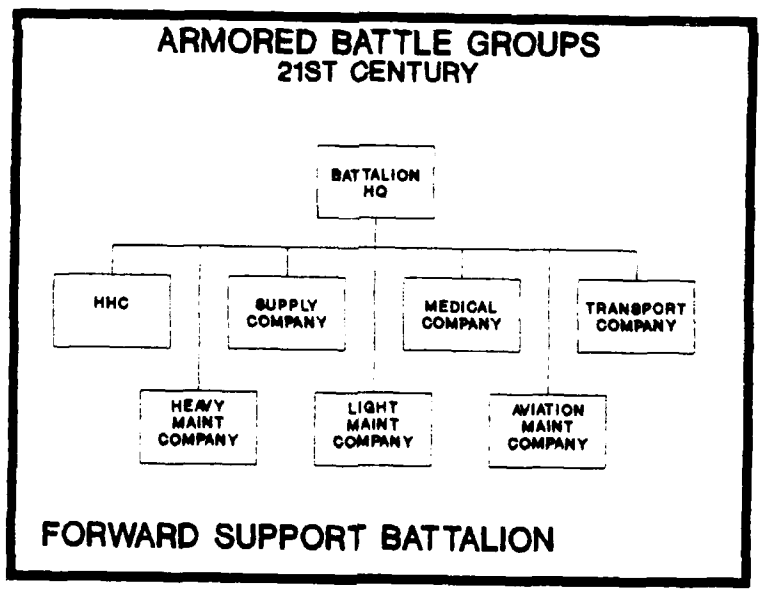

Figure 9. Forward Support Battalion Organization

The current Maintenance Company was replaced by a Light Maintenance Company and a Heavy Maintenance Company. The heavy company would provide direct support maintenance for all battle group armored vehicles and component equipment (systems). The light company would concentrate on the battle group's wheel vehicles, communications and electronics equipment, weapons, and other TO&E equipment. This company would also have some capability for repairing printed circuit board cards. It is inconceivable that we could allow a critical combat asset like a tank, Bradley or helicopter to be non-operational for lack of a 75 cent resistor. The present practice is to replace the whole card and evacuate the faulty card back to depot level maintenance for repair. Unfortunately, we run out of replacement cards before the ones being repaired at the depot are returned. If this happens in peacetime, it surely would happen in combat. Maintenance Contacts Teams in both companies were resourced and equipped in peacetime for sustained and continuous operations.

The Aviation Maintenance Company is a new organization at this level of maintenance (normally a DISCOM Main Support Battalion unit). Its primary mission would be to provide direct support maintenance for the battle group's Attack Helicopter Battalion and associated aircraft and aviation peculiar equipment.

The Transportation Company is also a new organization for the FSB. In today's heavy division, transportation assets are very short. Most of the transportation assets that were in the division were moved up to Corps level. As these units could not be re-

sourced under AOE, they were transferred to the Army Reserve force structure. Transportation is critical to resupply and to supporting the deep penetrations called for in Airland Battle doctrine. If we want to win the first battle, transportation assets must be on hand, not due in 10 to 30 days. Drivers in this unit were resourced at 1.5 drivers per vehicle.

The current FSB Medical Company consisting of four officers (three Medical Service Corps officers and one Dentist), one warrant officer (Physicians Assistant), and 74-78 enlisted men and women is too small to achieve continuous and sustained operations in combat. There is no medical doctor in the company. The unit is equipped with old M113 armored personnel carriers and does not have any High Mobility Multipurpose Wheeled Vehicles (HMMWV). Maneuverability on today's battlefield is poor, and the unit has a very difficult time keeping up with the more modern tank and Infantry battalions they support. Medical supply is not a problem in the current company.

These problems would be fixed in the Armored Battle Group. At least one medical doctor with surgical skills, preferably another with general medical skills, would be added to the company. Additional physicians assistants would also be added. HMMWV ambulances would replace the M113 ambulance tracks, and drivers would be resourced at 1.5 per vehicle. A Medical Service Corps Major would command the company and his 2IC would be a Captain.

In the Supply Company, personnel would be resourced to achieve sustained operations. All critical classes of supply would be

maintained at a 30 day stockage level. The same would be true for repair parts, especially those which cause critical mission equipment to be non-combat ready. Due to the maneuverability of the Armored Battle Group and the demands of Airland Battle doctrine, all supplies must be transportable on organic vehicles. The ability to transport bulk fuel for vehicles and aircraft would be increased.

The common changes made to other ABG battalions are applicable to this battalion, if appropriate. The sum total of these changes, although costly, will significantly improve the logistics sustainability of the Armored Battle Group and its subordinate units.

CLOSE COMBAT BATTALION

The Close Combat Battalion (CCB), Figure 10, provides support to the Armored Battle Group with those units normally attached or in direct support of the current brigade organization, with a some exceptions.

The Reconnaissance Company, as mentioned earlier, was formed from the Scout Platoons organic to the current Tank and Bradley battalions. This company would perform critical ground reconnaissance missions for the battle group and would be responsive to the battle group commander in combat. The company would consist of a Company Headquarters Section and four Scout Platoons equipped with the M3 Calvary Fighting Vehicle (CFV). The HQ Section would have three command variant CFVs - one for the company commander, one for his 2IC and one for the company First Sergeant. The

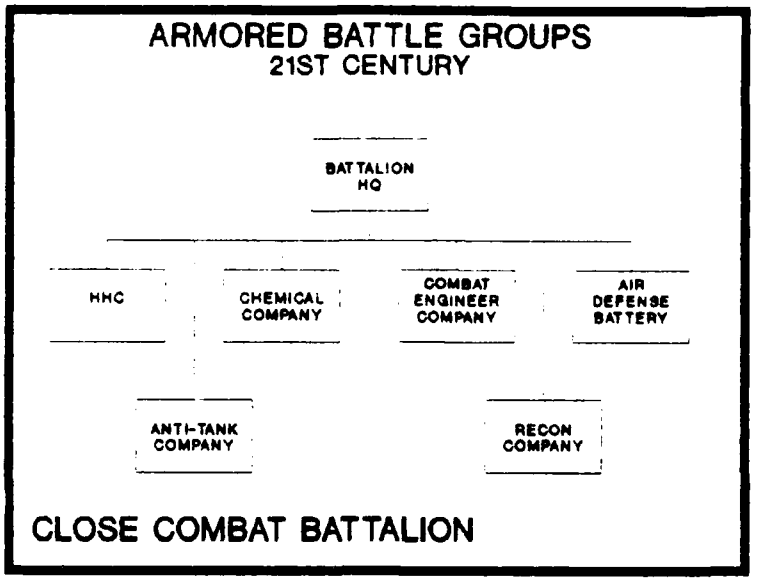

Figure 10. Close Combat Battalion Organization

Communication Sergeant would have a M113A3 Armored Personnel Carrier (APC), and the Supply Section would have two 5 ton cargo trucks with trailers. The company commander would also have a HMMWV. Each of the Scout Platoons would be equipped with six CFVs organized into three sections of two vehicles each.

The Anti-Tank (AT) Company was formed from the resources of the Anti-Tank Company in the current Bradley Infantry Battalion. Like the Reconnaissance Company, the AT Company would be a battle group asset. It would be organized similar to the Recon Company - HQ Section and four AT Platoons. The company commander, 2IC, First Sergeant and Communications Section Sergeant would be equipped with M113A3 Armored Personnel Carriers. The Supply Section would have two 5 ton cargo trucks with trailers. The company commander would also have a HMMWV.

Each of the four AT Platoons would be equipped with five armored vehicles. Two platoons would have M901 Improved TOW Vehicles (IFV) equipped to fire the Heavy Anti-Tank Weapon System-Heavy (AAWS-H), a hypervelocity kinetic energy missile. The other two AT Platoons would be equipped with vehicles similar to the IFV but equipped to fire a Fiber Optic Guided Missile (FOG-M), anti-tank version. Each platoon leader in the company would have one M113A3 APC.

The CCB Chemical Company is an expansion of the current capability where one Chemical Company supports an entire heavy division. The requirement for this company, chemical defense, is fairly straight forward. Chemical weapon capability is expanding throughout the world and the threat will continue to increase into the 21st century. This company would provide the battle group with personnel and equipment decontamination services, NBC survey and monitoring teams, and smoke generating teams. The company would consist of a HQ Section and four Platoons: two DECON Platoons, one Surveying and Monitoring Platoon, and one Smoke Platoon. Company vehicles would include M113A3 APCs, HMMWVs, and 5 ton cargo trucks with trailers.

The Combat Engineer Company would provide mobility, counter-mobility and protection capabilities for the battle group. The company would be equipped with the following engineer peculiar equipment: the M-9 Armored Combat Earthmover (ACE), the Mine Clearing Line Charge (MICLIC), the Multiple Delivery Mine System (VOLCANO), the Robotic Obstacle-Breaching Assault Tank (ROBAT), the

Armored Vehicle Launched Bridge (AVLB), Reverse Osmosis Water Purification Units, the Hand Held Mine Detector (AN/PSS-12), and the Mine Field Reconnaissance and Detector System. The company would be organized around a Headquarters Platoon, four Combat Engineer Platoons, and two Bridge Platoons.

The Air Defense (AD) Battery would provide the battle group with close air defense. The battery would be equipped with four of the five Forward Area Air Defense System (FAADS) components: the Line-of-Sight-Forward-Heavy (LOS-F-H) component, must likely the Air Defense Anti-Tank System (ADATS); the Non-Line-of-Sight (NLOS) component, based on the FOG-M; the Line-of-Sight-Rear (LOS-R) component, most likely the Pedestal Mounted Stinger (PMS) on a HMMWV; and part of the FAAD Command, Control and Intelligence (FAAD C2I) component. The AD Battery would be organized around a Headquarters Platoon, two ADATS Platoons, one FOG-M Platoon, and one PMS Platoon to provide air defense throughout the depth of a deployed ABG.

The CCB Headquarters and Headquarters Company (HHC) would be organized similar to the HHCs in the maneuver battalions - Company HQ, Staff Sections, Communications Platoon, Maintenance Platoon, and Support Platoon, and would have similar vehicles and equipment to support the missions of its companies. The changes common to the other battalions in the battle group would also apply to the CCB.

COMBAT SUPPORT BATTALION

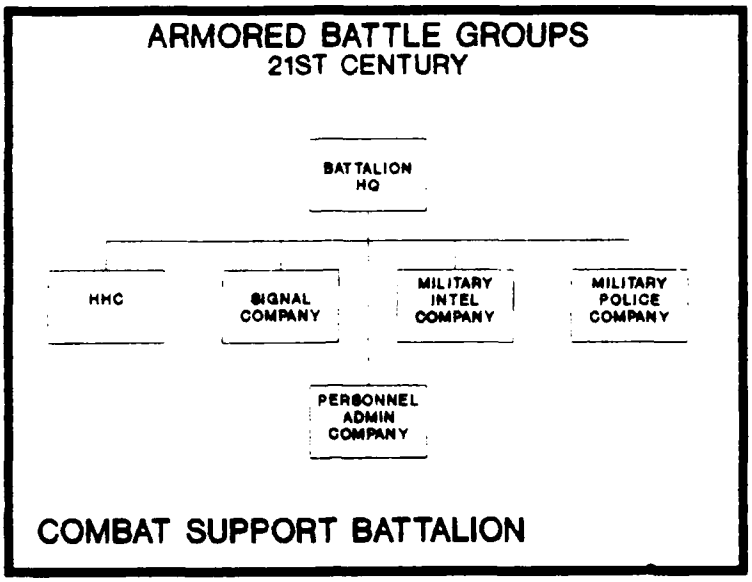

Figure 11. Combat Support Battalion Organization

The Combat Support Battalion (CSB), Figure 11, is a new formation that has roots similar to those of the Close Combat Battalion. The components of this battalion normally support the current brigade structure when it is organized for combat. It would be a small battalion consisting of five company organizations: Headquarters and Headquarters Company, Signal Company, Personnel and Administration Company, Military Intelligence Company and a Military Police Company.

The HHC, including the battalion staff sections, would be staffed and organized in a manner similar to other battalions in the battle group, perhaps a little smaller. Sustainment and continuous operational considerations common to the other battalions in the battle group are applicable to this battalion.

The Signal Company's mission is to support the Armored Battle Group Headquarters when it is deploys to the field. It would provide, operate and maintain all communication systems and equipment at the Tactical Command Post, Tactical Operation Center and the Rear Tactical Operation Center.

The Personnel and Administration Company would support the entire battle group both in peacetime and during combat deployments. This company would be responsible for providing strength accounting, casualty reporting, replacement and requisition operations, finance operations, and administrative support to the battle group headquarters.

The Military Police Company would provide site security, route reconnaissance, prisoner of war detention and control, and convoy escort security for the battle group. Company commander would be the MP staff officer on the battle group staff. The company would be organized with a HQ Section and four MP Platoons (one for each functional mission) and would be equipped with wheel vehicles - 5 ton cargo trucks and HMMWVs.

The Military Intelligence Company would provide direct support to the Battle Group S-2. It would also provide the personnel and equipment to interface with the Joint Surveillance and Target Attack Radar System (Joint Stars), OV-1D (Mohawk) Surveillance System, Quick Fix, Quick Look and Improved Guardrail V through the Ground Station Modules (GSM), the All Source Analysis System (ASAS) and the Forward Area Air Defense Command, Control and Intelligence (FAAD C2I) System to provide real time or near real time intel-

ligence to the battle group. The MI company would have ground based jamming capabilities. It would have little or no radar collection capability or analysis capability (requiring analysts and linguists) as the company would rely extensively on Remotely Piloted Vehicles (RPV) and other aerial sensors to provide voice collection, target acquisition and limited direction finding.

ENDNOTES

1. U.S. Department of the Army, 1988 Weapon Systems, (Washington: Department of the Army, 15 January 1988). This is the principle reference used to identify current and future Army equipment in this paper.

2. Memorandum, AETSBFM, Subject: Tank and Mechanized Infantry Organizational Issues, Headquarters, 3d Infantry Division, Office of the Commanding General, 2 June 1988, p. 2, (hereafter referred to as the "Marne Memo").

3. Ibid.

4. Ibid.

5. Ibid.

6. Ibid., p. 3.

CHAPTER V

STRATEGIC DEPLOYMENT

CURRENT SITUATION

Currently, the U.S. is vulnerable to a strategic faint. The Soviet Union could force us to commit forces to one theater of operations, and then open their main effort in another theater. The Army does not have the capability to reallocate forces quickly, especially modernized, heavy forces with substantial combat power. Strategic airlift assets fall far short of requirements. Future budget constraints and the high cost for programs like the Air Force's C-17 make any significant expansion of airlift resources doubtful. Modernization and growth of Warsaw Pact and Third World military power will continue to increase into the 21st century. To accomplish its strategic mission - to project land combat power worldwide, the Army must find a solution to the problem of deploying its heavy divisions.

MARITIME PRE-POSITIONING SHIPS

A maritime pre-positioning force operation is defined by the Marine Corps as "a rapid deployment and assembly of a Marine Amphibious Brigade in a secure area using a combination of strategic airlift and forward deployed maritime pre-positioning ships".[1] The first loading of the Maritime Pre-positioning Ships (MPS) squadron in October 1984 added a new dimension to the Marine Corp's ability to react quickly to crisis situations.[2]

On order of the National Command Authorities, a MPS squadron, consisting of 4 or 5 specially configured and Navy commanded merchant vessels, would move from a forward location to a port or beach in or near a designated objective area. The ships are loaded with combat equipment and supplies required to support a combined arms Marine brigade of approximately 16,500 Marines and sailors. Soldiers are flown to an airfield close to the designated port by the Military Airlift Command. Soldiers linkup with the MPS squadron at the port, and unload and deperserve their equipment.[3] The MSP brigade is combat capable and ready to move on designated objectives within less than five days after the force arrives in the area. If required the brigade can fight for up to 30 days without resupply.[4]

There are a total of 13 maritime pre-positioning ships divided among three MPS squadrons. MSP 1 consisting of four ships is forward based in the Eastern Atlantic. MSP 2 with five ships is in the Indian Ocean, and MSP 3 with four ships is in the Western Pacific. Eight of these ships were converted from existing merchant ships, and five were built from the keel up. Spaces aboard the ships are humidity controlled to aid in the preservation of equipment and supplies. The ships have the capability to offload themselves in adverse weather conditions, either at pierside in three days or across the beach in five days.[5] Depending on the situation, an Aviation Logistics Support Ship and a Hospital Ship may be attached to the MPS squadron.

The MPS brigade is composed of a Command Element, Ground

Combat Element, Air Combat Element, and Combat Service Support Element. The Command Element has 770 Marines and sailors and provides: command, control and coordination; communications; counterintelligence; force reconnaissance and civil affairs functions.[6]

Ground combat power consists of: an Infantry regiment of 6,044 men in three battalions; a tank battalion with 53 tanks; two artillery battalions with 24 155mm towed howitzers, six 155mm self-propelled howitzers, and six 8-inch howitzers; 96 TOW heavy anti-tank weapons; and 109 LVT-7 assault amphibian vehicles.[7]

For aviation support the brigade's 5,840 man Air Combat Element has 68 helicopters and 78 fixed wing aircraft of different types. These aircraft are flight-ferried to the deployment area. Brigade ground-to-air defense weapons include six I-Hawk and 72 Stinger launchers.

The Combat Service Support Element has 3,087 men and provides the full spectrum of support: supply, maintenance, engineer, medical/dental, automated data processing, material handling equipment, personnel services, food services, transportation, military police, and finance operations.[8] An impressive force by any anyone's definition.

BATTLE GROUP POMCUS SHIP (BGPS) CONCEPT

With the Armored Battle Group we can have a heavy force which can sustain itself and operate independently in almost any environment. It has been said that "self-contained, small organizations

are more flexible in the fog of war . If we borrow a variation of the "Maritime Pre-positioning Force" operation from the Marines, the Army would have a potential solution to the heavy division deployment problem.

The concept for the Army's implementation of this operation would be similar to the III Corps at Fort Hood falling in on their POMCUS (Prepositioned Material Configured to Units Sets) stocks in Europe. An Armored Battle Group's equipment including supplies for 30-60 days would be pre-positioned on ships designed for quick loading and unloading. Each ship would be designed to hold at least one battalion/task force package. Tanks and Bradleys would be combat loaded (fuel and ammunition) and ready to fight as they came off the ships. Trucks would be loaded in accordance with their load plans with TO&E equipment and supplies.

Battle Group POMCUS Ships (BGPS) would be based at ports on our West and East coasts. In time of crisis, they would be pre-positioned at a designated overseas port(s) which had a nearby airfield. The Armored Battle Group, stationed at a CONUS base, operates and trains with an identical set of equipment. Upon alert notification, the battle group's soldiers with individual equipment are airlifted to the adjacent airfield, link up with the equipment at the port, and move to designated assembly areas.

The floating POMCUS ships would return to the U.S. to pickup another battle group, or they could be used to keep the forces ashore resupplied. Depending on ship design, one or more of the ships could remain at the port to provide a support base (main-

tenance, supply, and medical). Is this a competitive strategy to the Soviet ability to mobilize their cadre divisions quickly after conventional arms reductions take place in Europe?

ADVANTAGES OF THE BATTLE GROUP POMCUS SHIP CONCEPT

The advantages of this deployment concept are significant. Battle Group POMCUS Ships would provide: (1) rapid response, maneuverability, flexibility, versatility, and ability to mass and/or reinforce quickly; (2) strategic and operational security; (3) global power projection; (4) logistics sustainability; (5) combined arms, joint and allied interoperability; (6) strategic leverage and political flexibility; and (7) cost effectiveness (present and future).

Rapid Response, Maneuverability, and Ability to Mass/Reinforce Quickly. Battle Group POMCUS Ships 400 miles out at sea along our East Coast could land anywhere on the coast between New York City and Cape Canaveral within 24 hours. BGPSs could reinforce the flanks of NATO in a few days sailing time, even less time if the ships were already pre-positioned in European ports. South Korea could be reinforced quickly in time of crisis. The BGPS concept would be especially useful for contingencies like Cuba and the Philippines where the U.S. already has secure air base and port facilities. Navy could escort and protect. This is a competitive strategy to the Soviet ability to mobilize cadre divisions and move them back into Europe after conventional arms reductions take place.

Flexibility and Versatility. The BGPS concept is much more versatile and flexible than having POMCUS at fixed sites in Europe. With fixed sites the equipment is committed to that theater of operations and can only be moved with a great cost and effort. With CONUS based combat forces and BGPSs, the Army would have the capability to project its forces anywhere in the world. Even if our heavy divisions remain in Europe, the BGPS concept would be better than relying on fixed POMCUS sites in Europe. BGPS would allow the landing of heavy forces at ports throughout Europe, even opening up new fronts - a significant operational advantage. BGPS concept maximizes the best advantages of both strategic airlift and strategic sealift. Airlift sorties saved by utilizing this concept would be available for other missions.

Strategic and Operational Security. Strategic and operational security would be significantly increased. BGPS, as compared to fixed POMCUS sites in Europe, would be less susceptible to sabotage, overhead surveillance, surface surveillance, or as objectives for direct attack by Soviet airborne forces as part of their concept for theater strategic operations. Depending on ship design, BGPS can blend in with other commercial cargo vessels. BGPS would use the vast expanse of the oceans and could move from port to port to conceal our strategic and operational intentions. Operational security would also be improved in CONUS. BGPS designated units would move their soldiers by strategic airlift. Their equipment would not have to convoy and rail to the nearest port facility.

Global Power Projection. U.S. global power projection would be enhanced greatly. Currently, only the 82d Airborne Division and the Marine Amphibious Brigades have this capability, and they are not designed for sustained combat operations in mid to high intensity environments. The U.S. Army could take advantage of the seas, like the Navy and Marines, to project land combat power decisively anywhere in the world. BGPS combines land power and sea power in one operation. Maximizes and contributes to the advantage the U.S. has as the world's greatest naval power. BGPS can be under the operational control of designated CINCs, OJCS (National Command Center), Transportation Command, or the Military Sealift Command.

Logistics Sustainability. In his book entitled, The Sinews of War, James Huston points out some basic principles of logistics that have withstood the test of time. "The primary purpose of logistics is to deliver adequate or actual fire power or shock to the critical places at the critical times for the achievement of tactical and strategic objectives".[9] Historically, logistic resources have almost always been limited. This is true today, and due to high costs and budget constraints, it will most likely be true in the future. Logistics must be concentrated in the best way to accomplish the mission.

During World War II, it took two Victory ships to move 15,000 tons of cargo to Japan. To move the same amount by air required 3,000 air flights plus eight ships to carry the gasoline for the aircraft, a greater number of manhours required for operating and

servicing the aircraft, the highly trained air crews, and the extra refinery capacity needed to supply the gasoline.[10] Aircraft and ships are more efficient today, but the same principle applies - it is much more economical and efficient to move cargo by ship. One of the Marine Corps' Braintree type ships, used in its MPS squadron, can carry the equivalent of 1,000 C-141 sorties. Each of these ships can carry 900 vehicles and enough fuel to fill 300 5,000 gallon tankers.[11]

Logistical activities and storage should be dispersed, and multiple lines of communication should be used in order to minimize losses from enemy action and congestion of activities.[12] "Since it is not often possible to count on prior strategic plans, it is necessary to be prepared to support any number of different plans or decisions, and to support changes in plans or decisions indicated by the fortunes of war. To support flexibility in plans there should be flexibility in forces - a versatility in troops and organizations as well as in storage and other facilities to meet changing needs".[13]

The Battle Group POMCUS Ship concept supports these principles and facilitates logistics and sustainment at strategic, operational and tactical levels. Thirty or more days of resupply could go in with the equipment and be available at the port. Thus, required logistics support is concentrated with the supported unit. Since this concept ties both airlift and sealift together in one operation, dispersion of logistics is achieved by functional area. Additional dispersion can be obtained by keeping some ships out at

sea until required, or disembarking equipment and supplies at more than one port. After unloading, BGPS would be available to return to U.S. ports for redirection, resupply, or to deploy additional forces to another theater of operation. Flexibility is maximized. The entry port(s) could become a fixed support base(s) for the deployed Battle Group. Depending on ship design, one or more could function as Battle Group field trains - base location for the Forward Support Battalion - medical, maintenance, and supply, and for the Combat Support Battalion.

Combined Arms, Joint and Allied Interoperability. The operational concept for Battle Group POMCUS Ships is by its very nature, a "joint" operation. It would provide for much better integration of the Army, Navy, Air Force and Marine functions, teamwork and development of joint doctrine and tactics. Airborne, Ranger, and/or Marine forces can secure the port along with an airhead to land the Armored Battle Group troops. Some equipment, transportation assets to carry soldiers from the airhead to the port to linkup with their equipment, can be flown into the same airfield. Ideally, all of this should happen before hostilities break out, as a reaction to an anticipated threat or request for assistance.

BGPS could be used to follow up and reinforce Marine amphibious landings, something we are not currently able to do with our heavy forces due to shortages of strategic sealift assets. BGPS could also be used to reinforce a previously deployed light Infantry division. Strategic sealift would become a reality. BGPS

concept is adaptable to allied operations and interoperability. Ship design could very easily accommodate equipment from other services and countries, and most of our allies are familiar with amphibious and supporting naval operations. The reality of this concept is that it has warfighting advantages for all services.

Strategic Leverage and Political Flexibility. The Battle Group POMCUS Ship concept together with the Armored Battle Group can have a very strong deterrent effect. Today, we see this in the form of a Marine Amphibious Task Force which is only organized and equipped for limited amphibious operations - not sustained land warfare. Imagine the political and psychological impact of a self-contained Armored Division or Corps sitting in ships off your coast!

The presence of this highly mobile, self-contained force combined with forces from the other services would provide our National Command Authorities with excellent political leverage and flexibility - keeps initiative on the U.S. side. U.S. objectives could be accomplished by the mere presence of the BGPS. This concept also provides escalation control and war termination leverage due to the rapid response, maneuverability, flexibility and versatility of the BGPS.

Cost Effectiveness. As previously mentioned, it is much less costly to move cargo by ship than by aircraft. The cost of building the required amount of strategic aircraft would exceed the cost of building the ships required to support this concept. The BGPS concept would permit the forward basing of equipment without the

associated costs of forward basing soldiers and their families. The only questions are: how many ships do we want to build; how many Armored Battle Groups or Divisions do we want to support; and how fast do we want to implement the concept? A goal might be to have an Armored Division or Corps afloat by the early part of the 21st century - a significant improvement in the Army's strategic mobility. Since this program would help our ship building industry, our own port facilities and the Merchant Marine, the program could be very sellable to Congress and the American public.

BGPS life cycle costs would be much lower in comparison to the life cycle costs of the required strategic airlift, even taking into consideration the cost of maintaining equipment and supplies in a maritime environment. Technology should be able to reduce these maintenance costs by the 21st century. Both the Navy and the Marines have considerable experience in this area. The Army can get a jump on this maintenance problem by adding a corrosion resistance specification to the procurement contracts for new equipment and supplies.

Capital investment in the equipment that is stored on the ships is minimal. Equipment could be withdrawn from fixed POMCUS sites, made available through the deactivation of heavy force structure, assuming one or more divisions are withdrawn from Europe, or made available through normal modernization rotations. Any combination of BGPS would reduce airlift requirements and improve readiness significantly.

DISADVANTAGES OF THE BATTLE GROUP POMCUS SHIP CONCEPT

As with any new concept, there are some disadvantages: (1) initial capital investment, (2) ASW threat to the 4000 mile convoy route to Europe, (3) requirement for secure port and airfield facilities, (4) off load time, (5) port handler unit requirement, and (6) maintenance requirements due to the maritime environment.

Initial Capital Investment. The initial capital investment would be significant; however, in relative terms and in comparison to the cost of other programs like the C-17, money spent on the BGPS concept would be well spent. The approximate cost for one C-17 that can carry one M1A1 tank is $300 million. The cost of one Fast Sea Lift ship with a capacity of 7,000 tons, enough to carry an Armor battalion, is $230 million. The cost of implementing the BGPS concept could be spread out over 10-15 years by buying one set of ships in a particular POM cycle.

ASW Threat. The ASW threat to the 4,000 mile convoy route to Europe is a disadvantage, but BGPSs could already be prepositioned imports throughout Europe. They could also move with one of the Navy's Carrier Battle Groups. Ideally, the ships would be designed to closely resemble commercial cargo/container ships, thus making them difficult to distinguish and single out in a crowded port.

Secure Port and Airfield Facilities. The requirement for secure port and airfield facilities is not significant in relative terms. The same security requirement exists today with our fixed POMCUS sites and disembarkation ports in Europe. As a reaction to an anticipated threat or as a response to a request for assistance

by a friendly nation, BGPS deployment can be completed before hostilities break out.

Off Load Time. It takes the Marine Corps about 10 days to disembark one of its Amphibious Brigades. Ideally, BGPS would consist of roll-on and roll-off ships, minimizing the time required to load and unload. The concept calls for all equipment and supplies to be combat loaded on unit prime movers, thus reducing unloading time and cargo handing requirements.

Port Handler Unit. The requirement for port handing equipment and operators is a function of ship design and operational concept. If the ships are designed to have a true roll-on and roll-off capability, and supplies and equipment are combat loaded on prime movers, the port handling requirements will be minimal. On the other hand, if the ships are designed more like commercial container ships, port handling requirements will increase significantly.

Equipment Maintenance Requirements. Maintenance requirements for equipment carried on board ships in a salt water environment is significantly greater than for equipment stored on land and away from a maritime environment. Both the Navy and the Marine Corps have considerable experience in this area. Future technology can also reduce this burden, particularly if equipment and supplies are designed to be corrosion resistant. Scheduled preventive maintenance checks and services, outlined in Chapter 6 of this paper, will also minimize the damage caused by a marine environment.

ENDNOTES

1. U.S. Marine Corps Development and Education Command, "Concept for MPF Operations", Student Outline, (Quantico: Combat Service Support Instruction Division, Amphibious Instruction Department), p. SO-1.

2. Armed Forces Staff College, Navy and Marine Reference Book, (Norfolk: Armed Forces Staff College, December 1986), Chapter 11, Section IV, p. 11-15.

3. Ibid., p. 11-15 to 11-16.

4. Ibid., p. 11-16.

5. Ibid., p. 11-16 to 11-17.

6. Ibid., p. 11-17.

7. Ibid.

8. Ibid., p. 11-18.

9. Huston, James A., "Army Logistics 1775-1953", The Sinews of War, Army Historical Series, (Washington: Office of the Chief of Military History, U.S. Army, 1966), p. 742.

10. Ibid., p. 746.

11. Navy and Marine Reference Book, p. 11-20.

12. The Sinews of War, p. 748.

13. Ibid., p. 749.

CHAPTER VI

BATTLE GROUP TRAINING AND READINESS

FOCUS

The development of a new organization, Armored Battle Groups (ABG), together with a new strategic deployment concept, Battle Group POMCUS Ships (BGPS), will have significant and advantageous impacts on training, logistics and sustainment, and combat readiness. Together these concepts will help us win the first battle. Individual and collective training to support these two concepts must focus on the principle that we want to organize and train the way we intend to fight. Logistics and sustainment must support the principle that we want to deploy a self-contained heavy force which is able to support itself for a specified period of time in a combat environment characterized by sustained and continuous operations. Combat readiness will focus on the ability of the ABG to quickly deploy and linkup with its equipment on board BGPS.

TRAINING

Each Armored Battle Group would have two sets of equipment, one at home station and one on board BGPS positioned at CONUS ports or prepositioned at overseas ports. ABG homestation training would focus on its Mission Essential Task List (METL). This list would be similar to that of a current heavy brigade, but it would include those deployment tasks associated with the use of BGPS concept. Battalion, company and platoon METLs would reflect the ABG METL. New battalions and companies reflected in the ABG organization

would develop METLs which supported the ABG METL and their own mission statements. Individual, crew and section tasks together with leader development training at all levels would continue to be the critical foundations of higher unit METLs.

The ABG would be exercised and evaluated at least annually with its designated BGPS element, and the National Training Center (NTC) would continue to play a significant role in this training. As a concept the Battle Group POMCUS Ships could be prepositioned at a port in Southern California. The ABG would be flown into a nearby airfield, linkup with its equipment at the port, and road march to the NTC to conduct extensive maneuver and live fire exercises. The same scenario could be developed for conducting training exercises in other U.S. coastal states which had maneuver training areas within a reasonable distance from the disembarking port and airfield. These exercises could also be held in overseas countries which could support the port, airfield and training area requirements. This deployment training could also be expanded to include other Army units (Airborne, Ranger, or light Infantry units) and elements from other services (USAF, Navy and Marine Corps) that would normally be associated with the joint deployment of a ABG . Upon conclusion of the training, the ABG would return its equipment to the port for maintenance, inspection and reloading on board BGPS.

LOGISTICS AND SUSTAINMENT

By the very nature of their design, both the Armored Battle

Group organization and the Battle Group POMCUS Ship concept provide significant advantages from a logistical and sustainment standpoint. These advantages have been addressed in previous chapters of this paper. The maintenance and servicing of the equipment and supplies on board BGPS is critical to the successful employment of the ABG. The salt water environment of the BGPS dictates that a maintenance and service concept be developed to support the system.

The annual exercise of this equipment will go a long way toward maintaining equipment and supplies since all of it would be maintained and inspected before it was repacked on board ship. However, some of the equipment stored on board the ships, depending on design, would require semi-annual servicing and inspection. To minimize the cost of this effort, the equipment and supplies could be maintained at service centers at the BGPS home port by Army personnel, by Army civilian personnel, by contracted civilian personnel, or by a combination of all three. The time required to accomplish this maintenance effort would be a function of the resources put into the maintenance and service program. Supplies and ammunition would also be rotated and refurbished periodically to insure combat readiness. New equipment would be integrated into the Armored Battle Group and the BGPS system at the same time.

OPERATIONAL READINESS

In order to achieve the full operational and strategic deployment advantages of both the ABG and BGPS operational concepts, two sets of BGPS would need to be combat ready and on

alert status at all times (one on the West coast and one on the East coast). This would dictate the development and deployment of at least four sets of BGPS to support three cycles. Two sets would be maintained on an alert cycle, one set would be used for training cycle, and the fourth set would be in a maintenance and service cycle. Refer to Figure 12. As the chart shows, BGPS 1 and 3 would be stationed on one coast and BGPS 2 and 4 would be on the other coast. Each coast would have one set of BGPS on alert at all

BATTLE GROUP POMCUS SHIPS ROTATION CYCLE

BGPS NO.	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1	TRAIN	MAINT	ALERT	ALERT
2	MAINT	ALERT	ALERT	TRAIN
3	ALERT	ALERT	TRAIN	MAINT
4	ALERT	TRAIN	MAINT	ALERT

Figure 12. Battle Group POMCUS Ship Rotation Cycle

times. Each coast would have a BGPS available for training exercises six months out of the year, and each coast would have a BGPS available for maintenance and services for six months out of each year.

At least two Armored Battle Groups would be able to use a BGPS set during each of the designated training quarters (four ABGs during the year). Each ABG would have the equipment available for

training for approximately 45 days. During this period they would disembark the equipment from the ships, move to a training area, train, return the vehicles and equipment to port, perform required maintenance, and reload the ships. Another ABG following on the heels of the first would accomplish the same procedure. Immediately following a training cycle is a maintenance cycle. When the BGPS completed its maintenance and service period, it would move into a six month alert cycle.

During periods of increased tensions all four BGPS sets could be put on alert. Our National Command Authorities (NCA) would have the equivalent of two Armored Divisions which could be deployed to a trouble spot. Both elements would be self-contained and able to sustain continuous combat operations for a period in excess of 30 days. Both sets of BGPS would be available to return to CONUS to pickup another two divisions if the situation warranted it, or be used to keep the forces deployed ashore resupplied. The U.S. Army would be in an age where it could quickly deploy land combat power worldwide.

CHAPTER VII

SUMMARY AND RECOMMENDATIONS

SUMMARY

The 21st century will bring many challenges. The U.S. Army will continue to have a strategic mission - to project land combat power worldwide. The Army will have to accomplish this mission in an environment characterized by decreased defense spending, increased procurement costs, and increased competition between the services to fund their modernization programs. Soviet General Secretary Gorbachev's new initiatives, the real potential for conventional arms reduction treaties, the increased cost of maintaining overseas bases, and changing foreign attitudes in-regards to forward basing U.S. forces will impact on one of our fundamental elements of military strategy - forward deployed forces. Threat capabilities in the 21st century will be greatly enhanced, especially in the Soviet Union and her client states. Third World nations will possess increased conventional military capability. Severe economic problems, fragile governments and regional rivalries will persist into the 21st century increasing the risk of potential U.S. Army involvement.

The U.S. Army's 21st century heavy force structure will continue to be the foundation and key stone of its land combat power providing state-of-the-art forces capable of continuous operations by smaller self-sustained formations, increased unit mobility, agility and organic firepower, and improved communica-

tions, intelligence, command and control.

The Armored Battle Group organization and the Armored Battle Group POMCUS Ship strategic deployment concepts outlined in this paper will meet the challenges of the 21st century and will maximize National Command Authority flexibility in responding to future threats. The table reflected at Appendix 3 lists the essential features for future Army forces as reflected in the Army Long Range Planning Guidance.[1] The Armored Battle Group concept together with the Battle Group POMCUS Ship concept can achieve and maximize these features.

RECOMMENDATIONS

1. Approve the Armored Battle Group organizational concept for further detailed study, development and incorporation into the Airland Battle - Future objective force.

2. Approve the Battle Group POMCUS Ship concept for further detailed study, development and incorporation into future Army Long Range Planning Guidance.

3. Approve distribution of this document to the TRADOC community, Department of the Army Staff, Joint Staff, Transportation Command, Military Sealift Command, and other interested agencies.

ENDNOTES

1. U.S. Department of the Army, Army Long-Range Planning Guidance 1998 - 2008, (Washington: Department of the Army, 1988), p. 10.

APPENDIX 1

AMERICA'S BURDEN, ALLIES' ADVANTAGE: THE DEFENSE AND TRADE DISPARITIES

	U.S. TROOP PRESENCE	DEFENSE SPENDING % GNP	DEFENSE SPENDING PER CAPITA	U.S. TRADE DEFICIT/SURPLUS (IN BILLIONS)
BELGIUM	3,552	3.0	$345	$ +1.8
CANADA	525	2.2	308	-11.7
DENMARK	68	2.0	322	-1.0
FRANCE	82	3.9	514	-3.2
GREECE	3,369	6.1	243	-0.1
ITALY	14,732	2.2	235	-6.2
LUXEMBOURG	10	1.1	145	*
NETHERLANDS	3,140	3.1	365	+4.0
NORWAY	216	3.1	520	-0.7
PORTUGAL	1,679	3.2	91	-0.1
SPAIN	8,384	2.6	156	+0.05
TURKEY	4,884	4.8	54	+0.6
U.K.	29,093	5.1	481	-3.9
W. GERMANY	245,322	3.1	454	-16.3
ALL NATO	315,056	3.3	302	-36.8
JAPAN	49,217	1.0	163	-59.8
U.S.	1,588,264	6.8	1,164	N/A

*Luxembourg statistics reported with Belgium's.

Sources: Figures on troop levels and defense spending come from the Defense Department and are not the most current available. Trade statistics are provided by the Commerce Department's trade research division.

APPENDIX 2

SOVIET BATTALION TACTICAL GROUPS

TANK BATTALION

3 Tank Companies (10 tanks each)

1 Motorized Rifle Company (BMP)

1 - 2 SP Artillery Batteries (8-120mm)

1 Mortar Battery (8-120mm)

1 Antitank Battery (ATGM, Guns)

1 Reconnaissance Platoon

1 SAM Platoon (9-SA14)

1 Assault Bridge Platoon

1 Engineer Sapper Platoon

1 Signal Platoon

1 Material Support Company

1 Medical Section

MOTORIZED RIFLE BATTALION

3 Motorized Rifle Companies

1 Tank Company (10 tanks)

1 Sp Artillery Battery (8-122mm)

1 Mortar Battery (8-120mm)

1 Antitank Battery (ATGM, Guns)

1 Reconnaissance Platoon

1 SAM Platoon (9-SA14)

1 Assault Bridge Platoon

1 Engineer Sapper Platoon

1 Signal Platoon

1 Material Support Company

1 Medical Section

HEAVY WEAPONS BATTALION

3 Heavy Weapons Companies

1 Artillery Battery

1 Mortar Battery

1 Antitank Battery

1 Reconnaissance Platoon

1 SAM Platoon

1 Engineer Sapper Platoon

1 Signal Platoon

1 Material Support Company

1 Medical Section

1 Tank Company (optional)

Source: Soviet Force Structure in an Era of Reform, Soviet Army Studies Office, Fort Leavenworth: U.S. Army Combined Arms Center, January 1989, p. 27-28.

APPENDIX 3

ESSENTIAL FEATURES OF FUTURE ARMY FORCES

FEATURES	ARMORED BATTLE GROUPS AND BATTLE GROUP POMCUS SHIPS
FORWARD DEPLOYED FORCES	
1. Improved fire support: look deep-kill deep capability for moving targets	YES
2. Able to exploit nuclear and chemical strikes	YES
3. Equipped with modernized nuclear and chemical weapons and EMP-hardened equipment	YES
4. Logistics and stocks to support protracted operations	YES
5. Integrated theater missile defense and air defense systems	YES
6. Improved accompanying air defenses for all units	YES
7. Strategically and tactically deployable	YES
8. Increased interoperability of consumables with allies	YES
CONTINGENCY FORCES	
9. Able to support other forces	YES
10. Improved strategic and tactical mobility	YES
11. Sustainable in austere theaters	YES
12. Capable of high-tempo continuous operations	YES
13. Forced entry capability	YES
14. Adaptable for role in target theater, but not over specialized	YES
15. Tank killer	YES
16. Expanded area of influence/area of interest at all echelons	YES
17. Capable of reinforcing forward deployed units	YES
18. Meet and defeat regional powers, forces of greater strength and similar technology	YES
19. Fight out numbered and win	YES
20. Capable of winning the first battle	YES
21. Preplanned host nation support	YES

APPENDIX 4

GLOSSARY

1SG	First Sergeant
2IC	Second-in-Command
AAWS-H	Anti-Tank Weapon System - Heavy
AB	Armored Battalion
ABG	Armored Battle Group
ACE	Armored Combat Earthmover
AD	Air Defense
ADATS	Air Defense Anti-Tank System
ADDS	Army Data Distribution System
ADP	Automatic Data Processing
AHB	Attack Helicopter Battalion
AIB	Armored Infantry Battalion
ALRPG	Army Long Range Planning Guidance
AOE	Army of Excellence
APC	Armored Personnel Carrier
ASAS	All Source Analysis System
ASW	Anti-Submarine Warfare
AT	Anti-Tank
AVLB	Armored Vehicle Launched Bridge
BFV	Bradley Fighting Vehicle
BGPS	Battle Group POMCUS Ships
CCB	Close Combat Battalion
CFV	Calvary Fighting Vehicle

CINC	Commander in Chief
CSB	Combat Support Battalion
CST	Conventional Stability Talks
DECON	Decontamination
DISCOM	Division Support Command
DOD	Department of Defense
EW	Electronic Warfare
FAADS	Forward Area Air Defense System
FAB	Field Artillery Battalion
FOG-M	Fiber Optic Guided Missile
FSB	Forward Support Battalion
GSM	Ground Station Modules
HEMTT	Heavy Expanded Mobility Tactical Truck
HHC	Headquarters and Headquarters Company
HMMWV	High Mobility Multipurpose Wheeled Vehicles
IFV	Improved TOW Vehicle
JSTARS	Joint Surveillance and Target Attack Radar System
LHX	Light Helicopter
LOS-F-H	Line-of-Sight-Forward-Heavy
LOS-R	Line-of-Sight-Rear
MAIN CP	Main Command Post
MBFR	Mutual and Balanced Force Reduction Talks
MCS	Automated Tactical Command and Control Systems
METL	Mission Essential Task List
METT	Mission, Enemy, Terrain and Time
MICLIC	Mine Clearing Line Charge

MLRS	Multiple Launch Rocket System
MOS	Military Occupational Specialty
MPS	Maritime Pre-positioning Ships
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological and Chemical
NCA	National Command Authorities
NCO	Non-commissioned Officer
NLOS	Non-Line-of-Sight
NTC	National Training Center
OJCS	Office of the Joint Chiefs of Staff
OMG	Combined Arms Maneuver Group
PLL	Prescribed Load List
PMS	Pedestal Mounted Stinger
POL	Prescribed Oils and Lubricants
POMCUS	Pre-positioned Material Configured to Unit Sets
ROBAT	Robotic Obstacle Breaching Assault Tank
RPV	Remotely Piloted Vehicles
RTOC	Rear Tactical Operation Center
SGT	Sergeant
TAC CP	Tactical Command Post
TACFIRE	Tactical Fire Direction System
TAMMS	The Army Maintenance System
TO&E	Tables of Organization and Equipment
TOC	Tactical Operation Center
TOW	Tube-Launched, Optically Tracked, Wire Guided Missile
TSO	Theater Strategic Operations

USAF	United States Air Force
VOLCANO	Multiple Delivery Mine System

BIBLIOGRAPHY

1. Armed Forces Staff College. Navy and Marine Reference Book. Norfolk: Armed Forces Staff College, December 1986, pp. 11-15 to 11-18 & 11-20.

2. Barry, John and Tom Morganthau. "The Defense Dilemma". Newsweek, 23 January 1989, pp. 15, 18-19.

3. Bresler, Robert J. "State of the Nation - Defense Strategy for the 1990's". USA Today, January 1989, p. 7.

4. Buchanan, Patrick. "How Do We Test His Sincerity?". The Washington Times (Washington), 12 December 1988, p. D1.

5. Carlucci, Frank C. Secretary of Defense. Annual Report to Congress, FY1989. Washington: U.S. Government Printing Office, 1988, p. 23.

6. Donnelly, Tom. "Pressure Building for West's Response to Gorbachev's Plan". Commentary. Army Times (Washington), 19 December 1988, p. 31.

7. Engelberg, Stephen. "Iraq Said to Study Biological Arms". The New York Times (New York), 18 January 1989, p. A7.

8. Glantz, David M., COL. Soviet Force Structure in an Era of Reform. Soviet Army Studies Office. Fort Leavenworth: U.S. Army Combined Arms Center, January 1989, p. 26-27.

9. Grier, Peter. "Outspoken Lehman Urges a Smaller Pentagon". The Christian Science Monitor, 27 January 1989, p. 7.

10. Halloran, Richard. "Army Weighs Shorter Troop Tours". The New York Times (New York), 18 December 1988, p. 34.

11. Huston, James A. "Army Logistics 1775 - 1953". The Sinews of War. Army Historical Series. Washington: Office of the Chief of Military History, U.S. Army, 1966, pp. 742-749.

12. Maze, Rick. "Aspen: Cutting Readiness May be Smart Way to Cut Costs". Army Times (Washington), 23 January 1989, p. 4.

13. McCartney, Robert J. "East Germany to Reduce Its Armed Forces. Honecker Urges Other European States to Consider Similar Cuts". Washington Post (Washington), 24 January 1989, p. A1.

14. McCartney, Robert J. "East, West Set New Arms Talks - Conventional Forces Mandate Clears Way For Rights Pact". Washington Post (Washington), 15 January 1989, p. A1.

15. Memorandum, AETHSBFM, Subject: Tank and Mechanized Infantry Organizational Issues. Headquarters, 3d Infantry Division. Office of the Commanding General, 2 June 1988.

16. Morrison, David C. "Fortress Europe - Who Should Pay For Its Defense?". Government Executive, February 1989, p. 20.

17. Pasztor, Andy and John E. Yang. "Bush Budget Aide Hints at Willingness to Accept Deep Cuts in Defense, Worrying Pentagon Brass". The Wall Street Journal (New York), 13 January 1989, p. A14.

18. Quinn-Jude, Paul. "Military Faces a New Foe: Criticism". The Christian Science Monitor, 3 February 1989, p. 3.

19. Ottaway, David B. "Middle East Weapons Proliferate". Washington Post (Washington), 19 December 1988, p. A1.

20. Ottaway, David B. "Probe Begins on Whether Iraq Got Deadly Bacteria From U.S.". Washington Post (Washington), 29 January 1989, p. A34.

21. Roth, Margaret. "Soviet Troop Cuts Vastly Change East - West Relations". Army Times (Washington), 19 December 1988, p. 24.

22. Ryan, Randolph. "Your Move, U.S.". Boston Globe (Boston), 12 December 1988, p. A7.

23. Summers, Harry. "U.S. Must Be Wary of Gorbachev's Gifts". Defense News, 23 January 1989, p. 35.

24. "Saudia Arabia to Purchase Bradley Fighting Vehicles". Defense News, 16 January 1989, p. 19.

25. The Joint Staff. United States Military Posture for FY 1989. Washington: U.S. Department of Defense, 1988, pp. 2,7 & 21.

26. The White House. National Security Strategy of the United States. Washington: White House, January 1988, p. 3.

27. United Press International. "Poland to Cut Military, Defense Minister Says". Washington Post (Washington), 9 January 1989, p. A15.

28. U.S. Army War College. Department of Military Strategy, Planning and Operations. Reference Text. Forces/Capabilities Handbook, Volume II, Weapon Systems. Carlisle Barracks: U.S. Army War College, 21 September 1988.

29. U.S. Department of the Army. 1988 Weapons Systems. Washington: Department of the Army, 15 January 1988.

30. U.S. Department of the Army. Army Long-Range Planning Guidance 1998 - 2008. Washington: Department of the Army, 1988, pp. 3-13.

31. U.S. Department of the Army. Field Manual 100-1: The Army. Washington: Department of the Army, 29 August 1986, p. 1.

32. U.S. Department of the Army. Office of the Deputy Chief of Staff for Operations. Mounted Warfare Study Group -2004. Executive Summary. Carlisle Barracks: U.S. Army War College, March 1988, pp. 2-6.

33. U.S. Department of the Army. The United States Army Posture Statement FY89. Washington: Department of the Army, 1988, pp. iii, 2-3, 8 & 51.

34. U.S. Department of the Army. Training and Doctrine Command. Airland Battle - Future (Heavy) 2004. Operational Concept for U.S. Heavy Forces. Final Draft. Fort Monroe: HQ, TRADOC, 10 January 1989, pp. E-1 to E-3.

35. U.S. Marine Corps. Development and Education Command. "Concept for Maritime Prepositioning Force Operations". Student Outline. Quantico: Combat Service Support Instruction Division, Amphibious Instruction Department, p. SO-1.

36. Vuono, Carl E., GEN, USA. "The United States Army Is a Strategic Force". Armed Forces Journal International, February 1989, p. 61.

37. Walcott, John and Robert S. Greenberger. "New Strains Beset U.S. - Greek Relations as Negotiations on Bases Get Under Way". The Wall Street Journal (New York), 13 December 1988, p. A17.

38. Whitney, Craig R. "For NATO, Gorbachev's Overture Has Drawbacks". New York Times (New York), 18 December 1988, p. 2E.

39. Wilson, George C. "U.S. Answer to Soviet Military Cuts Weighed - Withdrawing Some GIs, Reassessing Forward Strategy Among NATO Experts' Ideas". Washington Post (Washington), 3 January 1989, p. A4.