RUNNING HEAD: COMBINED ARMS OPERATIONS, READY AND RELEVANT

Combined Arms Operations, Ready and Relevant

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Abstract

Throughout history, Combined Arms Operations played a vital role in a conventional theatre of operations. Current doctrine in the Global War on Terrorism shows Combined Arms Operations can adapt in an asymmetric operating environment. Additionally, allied involvement compliments successful Combined Arms Operations. Future doctrine strategies indicate Combined Arms Operations is still relevant in a non-traditional linear battle space. Historical analysis visits from ancient times, Vietnam, World War II, to the Gulf War. Integration of Combined Arms Operations is paramount in today's strategy in the present asymmetric battle space. Combined Arms Operations is not just limited to United States (US) forces, coalitions can benefit from Combined Arms Operations strategies as well. The way ahead in Combined Arms Operations shows migrating from conventional strategies to joint combined arms teams remains an important and relevant strategy.

Combined Arms Operations, Ready and Relevant

Early days of Combined Arms Operations

The term combined arms is an approach to warfare that seeks to incorporate different arms of a military force to accomplish mutually complementary effects. (Wikipedia, 2007) The concept of Combined Arms Operations dates back to the early days of Western civilization and or antiquity (ancient times), where armies would send out small elite teams called Skirmishers (light infantry Soldiers) to protect the spearmen during the approach to battle. The job of these light infantry Soldiers were to constantly annoy, harass, and delay the enemies advance. In the late sixteenth century, the European armies developed the socket bayonet, it was initially used as an ancillary weapon (last resort), this bayonet had a long spike shaped blade that was attached to the end their muskets without obstructing the bore of the weapon during firing. This became an effective weapon for the light infantry Soldiers. Soldiers using this weapon could stand up against the enemies' horse Calvary charges in close combat without the use of any other specialized weapons.

Combined Arms Operations during World War II

Hitler's invasion of Poland on September 1, 1939, set off World War II as England and France declared war on Germany two days later. (Morris, 1996) During 1940, the U.S. Army created a new infantry division organization. This divisional organization was simple, agile, mobile, and trimmed of all nonessential personnel and equipment. The "triangular" division, the name used by army leaders had three infantry regiments, elements of combat and combat support personnel as its foundation. This new divisional unit became the blueprint for Combined Arms Operations. One of the U.S. Army's first major battles in World War II was one of its hardest. In the Normandy campaign, the U.S. Army had to adapt to a hostile environment known as the Bocage; Called the Bocage because of its terrain and thick hedgerows. The Bocage created limited visibility for the U.S. forces. The U.S. Army's senior leadership had no idea how hostile the hedgerow country was.

The U.S. Army showed an unwavering capacity to learn from mistakes and unappreciation of the Bocage. Leaders at all levels learned in combat how to utilize their equipment and organic weapons. At the company level, junior officers, sergeant, and enlisted Soldiers invented ways to solve tactical issues particular to close combat in the Bocage. One of the most notable transformations during this period was that tankers, engineers, artillery forward observers, and infantrymen all became close-knit partners in a coordinated effort.

Combat in this hostile environment emphasized the need for confident and competent leadership at all command levels. Army doctrine insisted that the coordination of a combined arms team was a command function. The U.S. Army had little to no combined arms teams training prior to D-Day. They conducted combined arms training behind the front lines that played a vital role in the success of American operations. During such training, tankers and infantrymen both familiarized themselves with each other's methods and capabilities. They also conducted remedial training on how to shoot, move, and communicate together under fire.

In the Bocage, the Army combined artillery, infantry and armor to destroy the enemy in a coordinated effort. Combat in the Bocage proved that Combined Arms Operations laid the foundation needed to carry the U.S. Army to victory over the Germans.

Combined Arms Operations during Vietnam

During the Vietnam War, the U.S. Army used extensive airmobile operations to frustrate, and keep the Viet Cong and North Vietnamese off balance. In a conventional infantry assault, Soldiers moved into position while artillery softens up the enemy; they then launch an assault to seize the enemy position. In airmobile operations, jet fighters, artillery, and helicopter guns rake an area with fire while infantry units close into the battle area in transport helicopters to bring the pain on the enemy. These types of combined arms operation tactics were highly successful and allowed the U.S. Army to counter the enemy tactic of ambushing.

Helicopters were the hallmark and workhorse of the U.S. military operations in Vietnam. Vietnam was the first, modern, nonlinear battlefield for the U.S. Army. During Vietnam, the introduction of rotary wing aircraft gave our military force an offensive weapon that would change how we fight for years to come. This was a significant event for Combined Arms Operations. The flexibility of the armed helicopter's weapons systems allowed engagement of targets without a requirement to maintain the armed helicopter on an aircraft-to-target line. (Tolson, 1973)

Combined Arms Operations during the Gulf War and beyond

During the weeks prior to the "Shock and Awe" campaign of Desert Storm, Army and Marine units were busy engaging Iraqi key targets. The Army multiple-launch rocket systems (MLRS), and Marine artillery, using Air Force airborne spotters had enormous success with artillery raids on enemy positions. This allowed Coalition air forces and Navy gunfire from battleships to pound the enemy and soften up the battlefield. On 17 January 1991, The "Shock and Awe" campaign began with a massive coordinated missile attack, launched from, battleships and cruiser in the Red Sea and Persian Gulf. These Tomahawk missile launches were part of a perfectly orchestrated joint strategic air campaign. Initially we launched over 100 Tomahawks into Baghdad, which eliminated the Iraqi command and control capabilities and Iraqi air defense systems. (NHCH, 1997) The world stood still and watched America's combined military firepower uproot Saddam Hussein and his regime.

The Tomahawk missiles and massive land campaigns were successful beyond all expectations and crippled the Iraqi Republican Guard within days. The Coalition forces were remarkable and worked together like a well-oiled machine, which played a vital role and laid the foundation for future Combined Arms Operations. This foundation is present in today's tactical use of Combined Arms Operations.

Combined Arms Operations on Today's Battlefield

As defined in FM 1, combined arms is a function both of organizational design and temporary association for particular missions. To achieve combined arms, commanders merge elements of different branches-armor, infantry, artillery, civil affairs, combat engineering, and many others-into highly integrated tactical organizations. The strengths of each branch complement and reinforce those of the others, making combined arms teams stronger than the sum of their elements. (Headquarters Department of the Army, 2005)

Afghanistan, Operation Enduring Freedom (OEF)

During the onset of operations in Afghanistan, the United States (US) Army re-introduced its leaders to the concepts and challenges of Combined Arms Operations. Though the configuration of the US Army as a whole continued its focus on Combined Arms Operations, the new challenge was incorporating the overlooked areas or less practiced operations. The linear battlefield changed to an asymmetric battlefield thus introducing new challenges associated with intelligence collection and the Intelligence Preparation of the Battlefield (IPB) process.

One aspect of the campaign that required the United States to adjust was the extraordinary negotiable aspect of Afghan warfare. (Stewart, 2005) Since the expansion of the asymmetric battlefield enveloping around Afghan warfare, the orientation of conventional operations slowed, forcing a need to expand beyond its current Combined Arms Operations levels. Special Operations Forces (SOF) began to bridge this gap, integrating with conventional forces that in the past had minimal operational experience with these specialized units. What SOF brought to the table ultimately expanded Human Intelligence (HUMINT) capabilities through Advanced Special Operations Techniques (ASOT). This added force multiplier proved indispensable to infantry battalions and expanded their war fighting capabilities well beyond their pre-combat levels.

Iraq, Operation Iraqi Freedom (OIF)

Operation Iraqi Freedom (OIF) posed new challenges for the US Army. Though the initial onset of combat operations carried all the aspects of linear battlefield, lessons learned from Operation Enduring Freedom in Afghanistan prompted commanders at the highest levels to prepare for certain change. Studying the Army lessons learned information, it is apparent that SOF remained the major change in the US Army Combined Arms Operations. As described by the Center for Army Lessons Learned, Army special operations soldiers, as part of the joint special operations team, led the way into Iraq. US SOF excelled during OIF. They did so on the basis of intense efforts made by the joint community, US Special Operations Command, and the services to develop capability and, more important, to integrate capabilities among SOF units and between SOF and conventional units. Integration of SOF operations in the campaign plan

paid enormous dividends. (Center for Army Lessons) Thus, conventional units found SOF, Psychological Operations (PSYOPS), Civil Affairs (CA), and Military Intelligence (MI) teams integrated within their units to assist these commanders in a seamless transition to the asymmetric battlefield. This would continue to transition to elements of SOF falling under conventional forces command for the first time.

> Effects of the National Military Strategy on Combined Arms Operations Strategic Level

The National Military Strategy maintains three principals in its reference to strategic level operations. These principals build the base for combatant commanders to build from and consist of Agility – the ability to rapidly deploy, employ, sustain and redeploy capabilities in a geographically separated and environmentally diverse region. Decisiveness – allows combatant commanders to overwhelm adversaries, control situations and achieve definitive outcomes. Integration – military activities integrated effectively with the application of other instruments. (National Military Strategy of the United States of America, 2004). These principals, when applied, support simultaneous operations on the global front and encourage the use of Combined Arms Operations as well as the Joint Operations Commands (JOC).

Tactical Level

Though the National Military Strategy does not specify guidance beyond the strategic level, combatant commanders can utilize the guidance within the National Military Strategy to assist in the overall development of tactical operations and the implementation of Combined Arms Operations within their battle commands. Combined Arms Operations should be the basis of their planning to ensure success in full spectrum dominance. Lessons learned from Operation Enduring Freedom and Operation Iraqi Freedom in the Combined Arms Operations arena need kept as close reference for future conflicts. Commanders should continue to adjust to the changing battlefield of tomorrow.

Interagency Integration

As we continue our push for the best war fighting capabilities, the US Army and other sister services will continue to see an increased push for interagency integration. Though this leads away from what the true meaning of what Combined Arms Operations is, it answers the call of the national military objective while maintaining focus on the strategic principles. With a more complex distributed battle space, this would seem paramount and only add to the expanding concept of Combined Arms Operations. Commanders at all levels should become familiar with the concepts described in the National Military Strategy and make every effort to include these agencies in their strategic plans. With this, a more complete operational environment will exist. In addition to interagency integration, integrating with coalition partners is additionally important to obtain joint objectives.

The Importance of Coalitions Fighting in a Combined Arms Context

In the Global War on Terrorism it is imperative that nations stand together to fight a common enemy. The use of coalitions in a combined arms context is more important than ever. That unity is a reflection of our will to prevail.

The fundamental basis for the organization and operations of Army forces is combined arms. Combined arms is the synchronized or simultaneous application of several arms-such as infantry, armor, field artillery, engineers, air defense, and aviation-to achieve an effect on the enemy that is greater than if each arm was used against the enemy separately or in sequence. (Headquarters Department of the Army, 2001) Combined Arms Operations is the ability of a force to bring to bear overwhelming, and decisive firepower onto an enemy to gain victory. The coordination of infantry, armored and artillery provides a commander with flexibility and the ability to prepare the battlefield to his own advantage. Even though coalitions provide specific challenges in Combined Arms Operations, their use is still relevant and effective in today's asymmetric style of warfare.

In today's War on Terrorism, these same principles hold true although the commander may face challenges different to some of his predecessors. We fight on an asymmetric battlefield where the enemy is difficult to fix. We fight against a non-conventional enemy. A recognized legal government does not support the enemy. He does not wear a uniform, and does not fight the way that we like to fight.

However, one of the biggest challenges facing the commander is that we fight in coalitions. He must be able to understand what each nation can bring to the table, what their abilities are, and how to best utilize them in his battle area. Many challenges face a coalition and their ability to fight as a unified force. In this paper, we will look at these challenges both historically and on today's battlefield. We will look at the benefits. Even though coalitions provide specific challenges in Combined Arms Operations, their use is still relevant and effective in today's asymmetric style of warfare.

Coalition Background and History

The use of coalitions fighting together is not a new concept. For many years, governments and military forces have used allies to support them in a common cause. As history progressed and warfare became more modern and fluid the coordination of combatants became ever more important. After the Spanish-American War, the United States (US) government determined a need for larger regular units composed of the combined arms. (Stewart, 2005) During World War I, several factors caused military leaders to look at the way that they fought wars. The introduction of the tank onto the battlefield provided the commander with firepower and maneuver. Never before was this type of movement possible. The earlier use of cavalry was fast but offered little protection to the horse or rider.

Another factor was the technological and tactical advances of the artillery. The guns became much more accurate. The projectiles became more lethal. However, the biggest advance was in the way that commanders employed the guns. Commanders began to mass fires to prepare enemy position before an attack. With technical advances in calculating for nonstandard conditions, survey, and communications, innovators tested new tactics such as predicted fire and the rolling barrage. The challenges that faced commanders at this time were the coordination of these fires with the maneuver of the infantry and armored.

Leaders began to see the full potential of Combined Arms Operations. Commanders developed new concepts in tactics as the Allied force fought as a coalition on the fields of France in the First Great War. World War II continued to provide technological advances to the combat arms. Once again, the allies were fighting in Europe. Coordinated fires and the art of maneuver allowed Hitler to gain the English Channel in days. After the invasion of Normandy, the allies depended on Combined Arms Operations throughout the battle for Europe. Radio communications improved efficiency and allowed soldiers on the ground to talk to fighters and bombers in the air, bringing another tool into Combined Arms Operations.

The use of Combined Arms Operations, especially in a coalition context also had political advantages on the home front where politicians were always trying to garner support for the cause.

Political Advantages of Coalitions

Coalition forces provide our political leaders with a political tool that they can use at home to gain popular support for the war. Domestically, they allow the leaders to sell the war on the fact that we have other nations that feel the same way as us. It shows the nation that they are not alone in a struggle. In The War on Terrorism, this is especially true. In a war that is becoming more unpopular as time goes on, the support of allied nations becomes more important to leaders in the United States and among all of the coalition countries. Any weakness within the coalition can jeopardize the effort and potentially endanger the strategic victory.

On the international scene, coalitions once again show a sign of support. When organizations such as the North Atlantic Treaty Organization (NATO) stand together for a common cause it is a statement to the international community that actions taken by the coalition are the right ones, and within the restrictions of international law.

Combined Arms Operations within these coalitions are still the way we fight. We must remember some factors and restrictions that some countries may have when it comes to their contribution.

Assets of a Coalition

When we form a coalition, one must remember that not everyone involved will be able to bring the same thing to the fight. Many countries are not able to integrate into the maneuver element of a US led coalition for many reasons. First, equipment incompatibility may limit the effectiveness of the coalition. For example in Afghanistan, many of our coalition partners are using Russian made Cold War era equipment, which limits the commander in his use of that force. Although he cannot necessarily utilize these countries in Combined Arms Operations, the commander can use these troops for other tasks. This may ensure that forces that are more compatible are available to take part in the operation.

Another factor that a commander must consider is the political restrictions placed on a force as a stipulation to their involvement. Due to political factors in the contributing country, some limitations may affect the way that a commander can utilize other nation's troops. Limitations on Rules of Engagement (ROE) may be so restrictive that the use of these troops in Combined Arms Operations may endanger themselves or their coalition partners.

In saying this, one nation may also bring to bear an area of expertise not necessarily available from the other contributing nations. The commander must consider not only what the partners can contribute, but also how to best utilize them in accordance with their own national policies and restrictions.

Challenges Facing Coalitions

Great challenges face any fighting force during Combined Arms Operations. Coalition style forces face all of the same and a few others just to make things interesting. One of the most evident challenges is language. Not all armies in the world speak English as a first language. The use of liaison officers in a staff headquarters is imperative. The liaison officer must have a sound knowledge of the working language and military terminology and tactics in order to translate orders for his supported force.

A second challenge faced by coalitions in Combined Arms Operations is differences in Tactics, Techniques and Procedures (TTPs) for a given operation or phase of a battle. Although not a huge issue within NATO itself as there are certain Standard NATO Agreements (STANAGS) in place concerning certain procedures and equipment standards. This challenge is more evident when a non-NATO country becomes part of the coalition. The fact that coalitions traditionally do not get an opportunity to train together before entering into a theatre of operations simply exacerbates the problem. Once again, NATO countries may have had the opportunity to train together during exercises and other operations. The non-NATO countries are at the disadvantage. These contributors on entering theatre encounter a steep learning curve and the commander must ensure that he properly trains before being integrating them into the coalition during Combined Arms Operations.

The last challenge to discuss is the political challenge. Any military is an extension of their society and the government for which they act. All coalition partners will come with certain strings attached. These may include restrictions on ROE. A commander may be restricted on how he may use these forces. In other cases, nations send forces with a deadline for their participation attached. As the end of a nation's mandate approaches, a commander may not be certain of having his forces intact after the deadline. On the international political stage that is a challenge for the coalition governments to solve.

We can see an historical example of these challenges during the Chinese Boxer Uprising of 1900. This was the first involvement of U.S. forces as part of a coalition. An eight-nation coalition was formed to quell anti-foreign sentiments in Peking. Some of the challenges that faced this coalition were a lack of command and control (C2) structure, friendly fire incidents, and unilateral actions taken by some nations in their own interest (Stewart, 2005). This first experience made many leaders skeptical of coalition involvement. Future wars would prove these detractors wrong. Coalition assets continue to play an important role in the future Combined Arms Operations strategies supporting full spectrum operations in the joint community.

The Way Ahead For Combined Arms Operations

Combined Arms Operations has historically provided commanders flexible options to package lethal combinations of firepower. Although these packages were successful, the process was often cumbersome and units were not agile or self-sufficient. The way ahead in Combined Arms Operations is resulting in the largest restructuring of the Army since World War II. The Gulf War and the Global War on Terrorism (GWOT) has caused a change to conventional Combined Arms Operations strategy. Current transformation and future doctrine will change the plexus of units to be more self-sustaining, agile, mobile, and joint centric.

Conventional Combined Arms Operations Strategy

The Division has officially been the capstone-fighting element since inception during World War I. Throughout the Army's history, change in structure and doctrine has followed every major conflict. Lessons learned have always been a major contributor to analyzing strengths and weaknesses of our combat formations. Since World War II, the Army has seen multiple changes in combat formations leading to the current modular structure.

Earlier formations were not true combined arms teams but rather specific organizations with supporting elements attached. The Army formations have migrated to a true combined arms formation during the past half century. (Encl 1) These changes in structure include the Reorganization Objective Army Division (ROAD), Division 86, the Army of Excellence (AOE) and current Modularity model.

ROAD was utilized during the mid 1960's and was a design concept based on Armor Command elements during World War II. This structure consisted of three maneuver brigade headquarters with attached battalion size infantry, armor, mechanized infantry, airmobile and airborne units. A common infantry division staffing structure consisted of 15,500 Soldiers. (Romjue, 1997) This configuration was in response to the growing Soviet nuclear capability threat resulting in President John F. Kennedy's administration drafting the "flexible response" strategy. These brigade task forces were to provide flexible means of defending Western Europe in either a nuclear or non-nuclear battlefield. (Hogan, 2004, p. 29-30) Although this configuration provided an increase in maneuver flexibility, there proved to be challenges involving command and control due to the widely dispersed fighting lines.

Growing concerns of the Warsaw-Pact capabilities in the late 1970's preempted the Division 86 structure. It is important to note this effort never met operational implementation or tested in a time of war but rather was a restructure study leading to redesign of both heavy and light units. Some of the chief components of this structure called for organically assigned tank, artillery battalions, and an emphasis on high technology. These organizations also focused on several important concepts, "maximum firepower forward; improved command and control, increased fire support, air defense, and ammunition re-supply; and an improved combining of the arms." (Romjue, 1997, p.10) The staffing element consisted of approximately 20,000 Soldiers. The main challenge with this envisioned makeup dealt with the heavy structure of both the armored and mechanized infantry threat abroad and staffing a Division 86 infantry division. Active Army end strength snared efforts to staff the proposed structures.

Army of Excellence was a further development of the Division 86 structure during the 1980's. This model relied on a light infantry division concept with the ability to deploy at a moments notice. The tactics were to "shock and awe" (Army of Excellence, 2004). This scenario was a delay tactic in order for heavier units to mobilize and deploy in support if needed. The focus was on a 3-brigade division with support elements augmented from Corps. Other key aspects included separating Special Forces into their own branch element and fortifying Ranger

units. (Army of Excellence, 2004). Staffing eventually arrived at 10,800 Soldiers. The AOE organization met the first test during Operation Desert Storm and remained the Army's structure until transformation.

Transformation

The Army started transitioning form the AOE model to a modular force in 2003. The main change moves the Army's fighting unit from division level to brigade level. Brigade Combat Teams are a true representation of combined arms teams that are mobile, self sufficient, and support joint operations. Heavy, infantry, and Stryker brigades are the standardized formations. Organically assigned battalion sized sustainment units help achieve self-sufficiency. (Encl 2)

Corps and Division Headquarters will still play a part although not as a contiguous element. These headquarters will serve as multilevel and joint platforms. Division, Corps, and Army Service component command are the three headquarters above brigade level. (Encl 3). Divisions will be responsible for orchestrating brigade combat teams. Corps will serve as a joint task force or land component headquarters and the Army Service component command lies with combatant commander responsibilities. Transformation could not have been possible without breakthroughs in satellite communication technology and information management innovations.

Future Doctrine

The 2004 Army Transformation Roadmap listed several important initiatives within the Army Campaign Objectives. An important initiative calls for the transformation of the Army while simultaneously developing future doctrine. The Combined Arms Center has validated this initiative. While transforming, the Army is developing future doctrine. Doctrine is currently lagging behind operational tactics, techniques and especially in the institutional arena. Future

concepts come from tactics, techniques, and procedures received from theatre and what analysts predict future capability requirements to be. Future doctrine while still providing combined arms teams will focus more on joint capabilities supporting full spectrum operations. The Combined Arms Doctrine directorate provided a copy of the future FM 3-0 for this report. This field manual focuses more on full spectrum operations. The future FM 3-0 still incorporates some information from the current FM; however, there is discussion with the new terminology and roles. One item that is missing in the future FM is the case studies throughout the manual. These case studies are an important and relevant text for the FM. It is important for young Soldiers to read how certain tactics were successful or failed. Adaptability, financial, and support of the people are all factors that will influence future doctrine. (S. A. Chambers, personal communication, October 24, 2007)

Conclusion

History shows Combined Arms Operations strategies employed since ancient times. Even rudimentary tactics involving the use of different combat capabilities proved successful. Based on historical record, the art of combining teams of separate arms will continue well into the future. Although many changes seem minor, those changes integrated in SOF, PSYOP, CA and MI show a significant impact in operations in GWOT. Using coalition partners in Combined Arms Operations strategies continues as a relevant joint power. Understanding and utilizing coalition assets will further theatre capabilities. The way ahead in Combined Arms Operations shows this is a relevant strategy in future operations. Full spectrum operations will focus more on joint capabilities of combined arms teams. Commanders must fully understand their unit's role, capabilities, and remain adaptive to provide ready and relevant firepower in combating today's asymmetric warfare.

References

- Army of Excellence. (2005). Retrieved November 13, 2007 from http://www.globalsecurity.org/military/agency/army/aoe.htm
- Center for Army Lessons. (n.d.). *Introduction*. Retrieved November 13, 2007 from www.globalsecurity.org/intro.htm

Headquarters Department of the Army. (2005). The Army. (FM 1). Washington, D.C.: Author

Headquarters Department of the Army. (2001). Operations. (p. 4-27). (FM 3-0). Washington,

D.C.: Author

Hogan, D. W. (2004) Centuries of Service, The U.S. Army 1775-2004. Washington, D.C.: Center of Military History, p.29. Retrieved November 25, 2007 from http://www.army.mil/cmh/books/COS/27-34.htm

National Military Strategy of the United States of America. (2004)

- Naval Historical Center Homepage. (NHCH). (1997). Retrieved October 17, 2007, from http://www.history.navy.mil/wars/dstorm/ds5.htm
- McGrath, J. J. (2007). The Other End of the Spear: The Tooth to-Tail Ratio (T3R) in Modern Military Operations. The Long War Series Occasional Paper 23. Fort Leavenworth, KS: Combat Studies Institute Press, 39-55. Retrieved November 13, 2007 from http://stinet.dtic.mil/oai/oai?&verb=getRecord&metadataPrefix=html&identifier=ADA47 2467
- Morris, James M. (1996) *America's Armed Forces, A History*. (p.209). Upper Saddle River, NJ: Prentice Hall, Inc.
- Romjue, J.L. (1997). The Army of Excellence: The Development of the 1980s Army. Fort Monroe, Virginia: TRADOC

References Con't.

- Stewart, R.W. (2005). American Military History, Volume 1, The United States Army and the Forging of a Nation, 1775-1917. (pp. 360-363, 374). Washington, D.C.: Center of Military History
- Stewart, R.W. (2005). American Military History Volume II, The United States Army in a Global Era, 1917-2003. Washington, D.C.: Center of Military History.
- Tolson, John J. LTC (1973) *Air Mobility 1961-1971*. Retrieved October 27, 2007 from http://www.army.mil/cmh/books/Vietnam/airmobility/airmobility-fm.html
- United States Army 2004 Army Transformation Roadmap. (2004). Retrieved November 13, 2007 from www.oft.osd.mil/library/library_files/document_386_ATR_2004_Final.pdf
- Wikipedia. (2007). Combined *Arms*. Retrieved October 26, 2007 from http://en.wikipedia.org/wiki/combined_arms