

Running head: COMBINED ARMS OPERATIONS

Combined Arms Operations

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Abstract

The purpose of this is to show how the United States Army combined arms operations are necessary to obtain success on today's battlefield. Combined arms operations have greatly evolved from the American Revolutionary War to today's Global War on Terrorism. The method used to show the need for combined arms is the contributions and impact of military police, intelligence, dental, engineer, and infantry since the start of warfare. All corps faced technological progress with new ideas to defeat the enemy and aid the fighting Soldier through every conflict. As the Army changed so have the capabilities of our combined arms operations in defeating the enemy with combat multipliers. Combined arms operations of today are even more vital in bringing lethal speed and crucial capabilities that are brought upon enemy forces to achieve total success.

Introduction

The Military Police have historically supported combined arms operations throughout America's conflicts. The use of Soldiers to police the force is nothing new, and utilized since the birth of warfare. This role has gone through several transitions and identified by different names but the primary focus of supporting the combined arms fight has not changed over time.

Military Intelligence has been a key element in all of the conflicts in which the United States involved itself in. There have been successes and failures, but through improved methods, and advancing technology, development of new ways to exploit our adversaries and keep commanders informed of the tactical situation.

As with all other aspects of our nations' military might, dental support of the Combined Arms Operation is essential and has continued to transform from its rudimentary beginning to the state of the art care provided on the modern battlefield. The provision of dental care has not always been a priority within the United States Army nor seen as a combat multiplier, but history has proven that a lack of adequate dental care compromises the ability to bring the full force of our military to bear on the enemy. Without a concerted effort to maintain the dental health of our Soldiers, leaders run the risk of not having their Soldiers available when needed the most.

The American Soldier relied heavily on other services to achieve victory in battle. Without the expertise of other services, battles would be lost and many Soldiers would die. History and the American will to be successful, forces leaders to use every means available to win in war. We must compare the abilities and assets the Soldier had available to him throughout time. America achieved its independence in 1776 and till this day continues to

defend this great victory. We will continue to defend this right for years to come. This will only be achieved by leveraging every asset available to achieve victory in battle. The combined arms fight is not only within the Army, but the use of foreign and domestic services to aid in the final outcome of a conflict. This will also extend to the local population of a desired area and the American public's view. Over the years from the American Revolution until present day the ability to apply assets to mass combat power has greatly increased. This ability has proven to be the success of America's military.

Engineers have been at the lead of battles supporting and shaping the battlefield throughout history from the American Revolutionary War to the current Global War on Terrorism. Engineer roles increased as technology and armies expanded into larger and more developed fighting forces. United States Army transformation and changes in doctrinal concepts increase engineer capabilities, by increasing agility and mobility as major factors at tactical and operational levels. Proven capabilities of the United States Army Engineers are crucial in combined arms effectiveness in today's full spectrum operations.

History of Combined Operations in Previous Wars

American Revolutionary War

During the Revolutionary War, Military Police support of the combined arms operations was very basic. Select Soldiers within each regiment had Military Police duties assigned to them. These individuals were typically selected for their size and ability to enforce discipline, and were called the "Sergeant of Arms" or "Master of Arms" ("Military police: Definition and Much More from Answer.," 2007, p. 1). Their focus was to police the ranks, collect stragglers, enforce discipline, and implement punitive measure or punishment. During contact with the enemy these .Soldiers were a regular part of the unit regardless of the unit's function. On 1 June

1778, at Valley Forge, Pennsylvania, following the harshest winter the Continental Army ever endured, General George Washington formed a special unit, a troop of light dragoons which were Soldiers on horseback. The troop would be called the Marechaussee Corps ("Military Police Corps," 2007, p. 1). The term "Marechaussee" was adopted from the French term "Marecheaux," meaning "Tribunal of Constables and Marshals of France, this was given to an ancient court of justice in Paris" ("Military police: Definition and Much More from Answer.," 2007, p. 3), which were the French provost marshal units dating back to the twelfth century. The original troop consisted of sixty-three men under the command of Captain Bartholomew Von Heer, a professional Prussian Soldier. The Marechaussee Corps had the duty and responsibility of maintaining order and enforcing the Articles of War in the often unruly and sometimes undependable American Army. The Marechaussee Corps was the first MP-like organization in the United States and performed many of the same duties required by today's Army Military Police Corps.

The Provost, which later evolved into the Military Police branch, allowed leaders to focus on war. The Provost kept good order and discipline in the camps and held Soldiers accountable for their crimes. During the American Revolution families, civilians, shop owners, merchants, blacksmiths and other sutlers followed the battles. Their location was in wagon trains a few miles behind the attacking forces. The Provost was commonly called upon to settle disputes and conduct of the Soldier during this period in time. The broken law would be brought to order in a court of law. Court was held and Soldiers and civilians were sentenced. There were many conflicts among Soldiers, civilians and families. In one case, a Soldier was found guilty of murdering a shop owner for sleeping with his wife. The Soldier was sentenced to death and was shot by a firing party. The provost would circulate around the camps and report violations of the

law to the commander of the fighting forces. The provost would also collect spies and intruding defectors into the camps. He would place them in custody to await trial or resolution by a presiding officer. Usually the likely place to hold a prisoner was the Powder Magazine where excess weapons and ammunition were stored while the Army was held up in a camp. This place would always have guards and a sergeant of the guard with an inspecting officer on duty. Soldiers would often go into the neighboring towns such as Charlestown and Williamsburg for some time off. Crimes were committed and Soldiers met their fate when they returned back to camp. The Provost watched over the conduct of the camps and maintained good order and discipline.

The Continental Congress sanctioned and monitored intelligence activities during the Revolutionary War to assist the war effort against the British. The congress created a secret committee for domestic intelligence, a committee of correspondence for foreign intelligence, and a committee on spies, for tracking spies within the patriot movement.

James Lovell, a teacher, became the Congress' expert on codes and ciphers and called the father of American cryptanalysis.

Intelligence collection methods relied heavily on humans to act as couriers in passing intelligence. The use of several covers assisted in this area. Agents acted as merchants, peddlers, smugglers, traveling tradesmen, and one actually acted as a British agent.

Disguise was also used to gain access to British occupied areas. Captain Allan McLane dressed himself as a country bumpkin spent two weeks collecting intelligence within the British fort at Stony Point and returned safely.

Secret writing was another method for passing intelligence. Silas Deane is known to have used a heat-developing invisible ink for some of his intelligence reports back to America. A "sympathetic stain" was created for secret communications by James Jay, a physician and the brother of John Jay. The stain required one chemical for writing the message and a second to develop it, affording greater security than the ink used by Deane earlier.

American Revolutionary leaders used various methods of cryptography to conceal diplomatic, military, and personal messages ("American Revolutionary War - Wikipedia, the free enc.," 2007, p. 1).

During the Revolutionary War (1776 – 1781), what we know as dental care was none existent. All Soldiers were responsible for their own dental treatment and when they needed care, they would leave their unit and return home to seek what care they could afford. This proved to be a very inconvenient situation that seriously degraded the fighting force and caused Commanders to deal with a constant shortage of men. This situation did not go unnoticed and pioneers in the dental field such as Jacques Gardette, a French Naval Officer realized that the need for institutional dental care was greatly needed but at the time, neither the money nor the will to provide care was available. Jacques Gardette did provide as much care as possible and was the first medially trained dental provider who worked with the Soldiers giving dental care. Despite the lack of care, there were some significant firsts during this era and these groundbreaking advances provided the foundation for new procedures and techniques. One particularly important advance was the ability to conduct forensic identification of remains. Although this advancement did not act as a force multiplier, it did demonstrate to senior leaders that dental care did contribute to the military mission and was a valuable tool in the identification of the deceased.

The Medical branch was originally started to help repair Soldiers when injuries were inflicted in battle. Medical personnel were important to prevent diseases and infection. More soldiers died from disease and infection than in combat related injuries. Preventive medicine was crucial to sustain the force. Leaders understood the importance of a healthy effective fighting force. Many times the Infantry Soldier was poorly fed and ill equipped. Many Soldiers didn't have shoes and were poorly equipped to face the elements. Soldier slept in small tents with six to a tent. Sickness quickly spread throughout an Army and could have easily led to future defeat. The Medical Officer was constantly seeing sick Soldiers, family members and sutlers. Medical kits and medicine were a scarcity for fighting units. During this period medicine was limited to the herbal treatments that Indians and slaves acquired by surviving on the land over years. Some tonics and potions were available but many were not proven to cure ailments. The unit was many times limited to the knowledge of the Medical Officer for success. Medical training was very limited and considered mysterious at this time. Medical officers did not have a clear understanding of human anatomy and did what they could to help sustain life. The focus was to keep you alive and not so much to get you back into the fight. The Medical Officer was the first and last chance you had as an Infantry Soldier to live. As the war continued on, Medical officers would learn more and become more proficient in their field.

Engineers oversaw the construction of fortifications, drew detailed maps for commanders, and reconnoitered enemy positions and possible battlefields during the war ("The Making of America and Her Independence," 2006, p. 1).

The American Revolutionary Infantry Soldier understood the importance of other services contributing to the war effort. Soldiers would use Engineers to build obstacles to protect forts or to disrupt formations of British Soldiers. These obstacles are most commonly called

“Breast Works”. Breast Works consist of a few obstacles that are used in their modern day forms still today. The “Gabion” which is a late version of the HESCO bastion, was a woven basket of vines filled with dirt and gravel to build a false wall or provide cover for the Infantry Soldier. The Cheveroex de frise was a spiked obstacle used to block mounted and dismounted Soldiers’ movements. This was the concertina or barbed wire of the time. These obstacles greatly increased the chances of victory for the infantry soldier.

West Point Military Academy was the leading training institute for officers during this period. The Military Academy specialized in Engineering. America had a great influence by the French during this time. Benjamin Franklin was the Ambassador to France and enlisted the expertise of French officers to train and advise the American Soldier.

Civil War

The Civil War brought unique challenges to the Military Police Corps of both the Union and Confederate Armies. The need for personnel to perform Military Police functions or Combat Support Operations became evident on both sides of the war. Most military police functions were additional duties assigned to the cavalry scout units. The armies of both the North and the South used the swift mobility of these mounted units to fix and locate the enemy and to direct the flow of supplies to the front, implementing the basic functions of battlefield circulation and control. Control of rear area operations became even more critical with both sides using techniques and tactics of disruption of supply lines and raids into the rear areas. MP units would patrol the flanks and rear areas, watching for spies and stragglers while safeguarding the baggage and supplies. As the infantry and cavalry troops went into battle, the men of the Corps patrolled the roads to the rear and on the flanks, guarding against enemy encroachment while continuing the search for stragglers and deserters. The war generated over 400,000

prisoners from both sides captured, resulting in both armies organizing “guard battalions” to secure these prisoners at camps like Ft. Delaware, Camp Elmira New York, or Andersonville, also known as Camp Sumter ("The Prisons Of The Civil War Overview," 2005, p. 4).

Thaddeus S. Lowe, a 29-year-old balloon enthusiast, went up about 500 feet on June 18, 1861, looked down upon Washington, and, via a cable linking his balloon gondola to the War Department, telegraphed a message to President Lincoln: “The city, with its girdle of encampments, presents a superb scene....”. It was the first wartime air-to-ground communication ever recorded in America. By linking the balloon to the telegraph, Lowe transformed what had been a novel contraption at country fairs into a tool for a new kind of intelligence gathering: real-time aerial reconnaissance. Balloons were used for surveillance until the spring of 1863, but were unable to secure a place in the bureaucratic niche in the Union Army.

The telegraph, however, went to war and stayed in the war. The Union particularly saw the value of the telegraph and used it as the key component in what would be the first modern military communication system. Field telegraph units linked commands and connected to hilltop signalers who sent messages by flags in daylight and by torches at night. Robert E. Lee did not allow transmission of planned troop movements as both sides were known to have tapped telegraph lines to intercept messages. Sometimes telegraph stations were captured and the operator was forced to transmit false information (CIA.gov, 2006, p. 25).

After the passing of nearly 100 years and with the United States involved in the Civil War (1861 – 1865) dental care had not progressed far from its roots and was still rudimentary at best. As with in the Revolutionary war self-care was still in place and most Soldiers had no routine care on or off the battlefield. This problem of no dental care was not only a problem on

the battlefield it also posed a problem for the recruiters of the time. Nearly 25% of all potential Soldiers could not enter the Army because they lacked the required six opposing front teeth. This denial of entry compounded the shortage of warriors and was due to a lack of care and education. There were a few advances during this time and one of these was the formal recognition of United States Military dentists. In 1872, hospital steward William Sanders became the first U.S. dentist, which began the process of developing the Dental Corps, as we know it today.

During the Civil War engineers supported the Army with topographical surveys, construction of roads and bridges, emplacing and removing obstructions, planning and erecting defenses during all campaigns ("Engineers in the Civil War," 2002, p. 1).

Without practical military doctrine, limited resources, and only a battalion size engineer force, they performed varied services with significant contributions. Most noted was the construction of passable fords at the battle of Antietam and a bridge over the Potomac at Harpers Ferry. Even at that time the secondary mission of engineers, infantry, was relied upon ("Engineers in the New Army," 2007, p. 2).

World War II

World War II created a specific need for military police to support the combat arms soldier. Recognizing this need, the Army formed the Military Police Corps and established the Provost Marshal General's Office and Corps of Military Police on September 26, 1941. Prior to that time (except during the Civil War and World War I), there was no regularly appointed Provost Marshal General or regularly constituted Military Police Corps, though a "Provost Marshal" can be found as early as January 1776, and a "Provost Corps" as early as 1778. With a new face of battle and highly mobile forces, the creation of a huge rear area to protect within the

European theater occurred (Weber, 1981, p. 137). MP units were constituted to perform security and guard enemy prisoners of war camps both in theater and within the continental United States. Everywhere the combat arms went the MP soldier was there to support them. Units such as the 82nd and 101st Military Police Companies (Airborne) participated in Operation Overlord. Once on the ground they performed the same basic military police functions as today. In the Pacific theater MPs supported operations by performing POW guards and direct support to the infantry while they moved throughout the theater. The support provided by MPs during these operations brought about the official birth of the MP Corps ("Military Police Unit Histories," 2007, p. 1).

The Military Police Corps would be used to control prisoners of war. They did maintain good order and discipline within the units but, they were used to secure sensitive areas and control the German and Japanese prisoners. The Military police made sure that commanders were able to keep discipline within the ranks.

Military police in World War II were sometimes issued the Indian motorcycle. Indian was unable to keep up with the war department's demands and began to contract the Harley Davidson for production and distribution to the police. Among some of the first models was the 1942 Harley Davidson WLA. Foot Soldiers were issued the BMW CJ 750 w/sidecar for use of transporting injured Soldiers to aid stations. This was an ideal mode of transportation in Europe at the time. The roads were under-developed, nor were they paved. Due to high volume travel and many seasons of mud and debris, this made the two wheeled vehicle ideal. In many situations Soldiers could not access front line positions without the use of the motorcycle.

The Military Policeman became the keepers and transporters of the prisoners. They set up detention camps in secured areas and processed detainees. The infantry Soldier was able to bring detainees to a secured location and turn them over to the Military Police for processing.

Military police were used to secure important people or high ranking officers. They provided personal security for many General grade officers during the war. Many command posts and officer quarters were over watched and secured by Military Police.

One of the little known contributions made by Japanese Americans in World War II was their roles as interpreters, in military intelligence in the Pacific Theater. Over 6,000 Nisei and Kibei accomplished training at Military Intelligence Service (MIS) schools. Around 3,700 went on to serve in battle with Australian, British, Chinese, American, New Zealand, and other allied forces (Finnegan, 2001, p. 4).

Largely due to the efforts of these newly trained linguists, the United States intercepted and decoded thousands of Japanese communications during WWII. Admiral Yamamoto's plans for a surprise attack at Midway in June 1942 were intercepted by cryptanalysts. This intelligence gave Admiral Nimitz advance notice of Japanese plans to attack Midway Island, allowing U.S. forces to lie in wait, ambush the Japanese, and turn the tide in the Pacific. The Japanese lost four carriers to one lost by the US (Finnegan, 1998, pp. 82-83).

The US Military didn't jam radio signals as a rule because it interfered with our own communications. However, they did make one significant attempt to disrupt enemy communications circuits during the Ardennes campaign, using electronic jamming equipment mounted in aircraft to interfere with the radio transmissions from German tanks. The 3103d Signal Service Battalion could simulate the communications nets of large formations. The US used this method of deception very effectively prior to the Normandy invasion by diverting the Germans from the real locations of American troop concentrations (Finnegan, 1998, p. 82,83).

Throughout World War II, the United States intercepted and decoded thousands of

Japanese communications; cryptanalysts gave U.S. war planners advance notice of Japanese plans to attack Midway Island in June 1942, allowing U.S. forces to lie in wait, defeat the Japanese, and turn the tide in the Pacific.

During World War II the infantry relied heavily on the information provided by the intelligence officers on the battle field. The infantry planned operations against the Germans based off of accurate intelligence. Planning the invasion of Normandy utilized all the information that American and British agents provided. The invasion was a success due to the accurate intelligence and valance of action by the infantry to aver come objectives. World War II was a vas intricate of small battles based off of intelligence given on both sides of the war. Soldiers fought well when they were provided the necessary information to achieve victory in battle. Pathfinders jumped into Normandy just before midnight and set up beacons and lights to show the C-47 pilots where to drop Paratroopers. Paratroopers where scattered over 20 miles of marsh and swampland and they still were able to move and attack their objectives.

Seventy-Six years later as the World entered into war the United States had made significant strides forward in the dental support it offered to the Soldier and was ready assist in making sure they were ready for combat. Compared to past wars the U.S. had a great number of dentists armed with the latest in technology. At the start of WWII, 2900 commissioned dental officers were capable and ready to deploy with their units despite their destination. These dental officers and their support staff provided dental care on and off the battlefield and were able to serve in a myriad of other capacities. One such capacity was the triage officer at field hospitals. During times of heavy casualties, dental officers and other dental personnel would relieve the physicians of the triage duties so that they could concentrate on saving lives in the operating rooms. This was of great service to our nation and many Soldiers returned to the battlefield that

may not have otherwise made it out of the triage site. Advances in medicine and dentistry occurred even during the war and Military dentists were the designers. Two important advances were the artificial resin eye and the metal skull plate. These two new ideas were directly responsible for the moral of the fighting men since they knew that if injury occurred they would have the best our nation could provide in medical treatment. When an individual knows they will be taken care of in an outstanding manner they are willing to go the extra mile.

Dental Officers would be those included in the group going the extra mile. One of the WWII Medal of Honor recipients was Captain Ben Louis Salomon, US Army Dental Corps who died in action on the Pacific island of Saipan as he provided cover for the patients of a field hospital as they retreated from the enemies advance.

Shortages of supplies, enemy attacks, and disease plagued the Military and the Medical Corps and because of this, lives were lost including twenty dental officers. In addition to these twenty, ten died in captivity, and 81 lost their lives to disease and non-battle injury. In the end, over 18,000 dentists served during World War II.

Prior to World War II, engineer responsibilities in the support of maneuver forces expanded with the use of more complex equipment and weapons. Engineers formed into divisional engineer regiments of general service and combat. Divisional combat engineer regiments supported most engineering tasks (including demolitions, obstacle emplacement, fortifications, and light bridge building) that established the shape of combined arms of today.

Combat engineers could not only perform their tasks, but fight as infantry when needed and done so on many occasions. Common engineer operations were established and conducted for use in World War II ("The Essayons(Combat Engineers, p. 1)").

During World War II there was a shortage of technical skilled construction engineers.

Additional engineer battalions were formed to enhance divisional engineer units. They were corps assets assigned to engineer groups. These general service engineers supported theater of operations by building numerous structures and facilities. They constructed and maintained air bases, maintained water supply, railways and oil fields. The combined arms responsibility of the engineers expanded rapidly, not only into tactical operations, but sustainment operations as well (Anderson, 2000, p. 1).

Vietnam War

The Vietnam conflict continued to change the MP Corps and its support of the combined arms fight. At that point in time, the Military police transitioned from the large scale EPW camps to the direct support of combat operations. Military police units provided personnel directly to the combat infantry divisions. These MP's would perform the basic MP battlefield functions of battlefield mobility, rear area security, law enforcement and EPW operations. The North Vietnamese and their use of guerilla tactics in the rear area and undefined battle fronts led to the first battle fought with only military police soldiers, the siege of the American embassy in Saigon. Military police also became frontline fighters during the successful effort to repel the North Vietnamese during the Tet offensive in 1968. At one point in the war, military police were given exclusive responsibility for a specific tactical area, including responsibility for civic action functions in that area (Stanton, 1981, p. 13). In 1968, the Army Chief of Staff, acknowledging the Military police Corps' active involvement in support of military operations in Vietnam, approved changing the branch's identification from combat service support to combat support. This change was clearly justified by the responsibilities assumed by the Corps in Vietnam where military police units were organized, trained, and equipped to perform operations in a combat support role. As a combat support branch, the Military Police Corps was placed

under the U.S. Army Regimental System in September 1986 (Commanding General, 1986). The lessons learned from Vietnam would change the face of the Military Police Corps and redefine its future missions, and Army doctrine changed to state "in previous wars military police usually performed a rear security role; the battlefield of the future would find the need for protection against rear area threats vastly increased. The military police in the rear area must be ready and able for short periods of time to assume a direct combat role (FM 19-1, 1988).

During the Vietnam conflict The Army Intelligence mission was heavily dependent upon the South Vietnamese. Since they were native to the area, they knew the language and terrain and they had generated a partially complete data base. The US and South Vietnamese manned a Combined Intelligence Center at Tan Son Nhut Air Base near Saigon. The center was under joint control of the Military Assistance Command, Vietnam (MACV), and the South Vietnamese high command. Creations of other combined centers assisted in the handle of POW interrogation, document exploitation, and analysis of captured materiel.

The teams of the 5th Special Forces Group, 1st Special Forces, in Vietnam and the Vietnamese Civilian Irregular Defense Groups they advised provided ground intelligence. The Special Forces had several camps, scattered throughout South Vietnam. They were used to detect the movement of infiltrating enemy columns. The Special Forces also conducted intelligence and counter-intelligence operations through their contacts with the local Montagnard tribesmen.

Some of the new technologies that emerged during the Vietnam conflict were:

1. Airborne electronic support which was conducted from fixed-wing aircraft and later from helicopters.
2. Unattended ground sensors or "people-sniffers" were introduced.

3. Infrared and side-looking airborne radar sensors supplemented the traditional visual and optical techniques of aerial observation.

4. Observation and armed helicopters were paired into "pink teams" with the dual missions of finding targets and fighting gave another dimension to traditional aerial reconnaissance.

Army Intelligence provided the higher commanders with significant forewarnings of the 1968 Tet offensive, the intensity of the enemy attack was underestimated. But the fact remains that Army intelligence provided the kind of warning before Tet in 1968 that it had been unable to furnish before the Battle of the Bulge in 1944 (Finnegan, 2001, p. 4).

A constant march of progress has been the model for the Dental Corp and the Vietnam Conflict was no exception. Our first involvement in this battle started in 1956 when LTC Jack P. Pollock's served as an advisor to the U.S. Military Assistance Advisory Group, Vietnam. This innovative service is not unusual. The Army has always needed the expertise of the Dental Corps and it has not shied away from sending Dental personnel out at the onset of war. During the Vietnam conflict several initiatives greatly improved the speed at which a Soldier could receive relief and cure from dental disease. One such creation was the improved intermediate restorative material (IRM) which prevented unnecessary extractions. Treatment and restoration was a great advancement over tooth extraction for any Soldier. The Army also began the practice of mass application of self-applied nine percent fluoride paste. This was one more step in the ways to keep otherwise healthy Soldiers on the battlefield rather than in the rear seeking treatment for their dental problems. The Dental Corps was able, during this time, to convince the Army that field screenings and sustained care at in-processing sites was important and valuable in the

prevention of dental emergencies. These screenings caught dental problems early and this prevention enabled more Soldiers to be with their units and in the fight as opposed to being back at sick call for dental care.

Vietnam proposed an even more complex challenge for engineers.

Non-divisional engineers. Non-divisional engineers faced large loads of construction tasks to accomplish. Shortage of skilled construction personnel made their mission of constructing airfields, fire bases, heliports, harbor facilities, major highways, and land clearing operations very difficult.

Land clearing played a significant role in Vietnam. Due to the innovation of land clearing techniques, forming separate land clearing battalions improved tactical purposes (Ploger, 2000, p. 95).

Divisional engineers. Divisional engineers' mission of improving mobility of friendly forces and obstructing the mobility of the enemy also met new challenges. Networks of widely used enemy tunnel systems had to be destroyed for sustaining forward offensive operations. An engineer demolition team tied in with an infantry company on operations with large formations provided immediate support (Ploger, 2000, p. 90).

Other combat operations included destroying enemy base camps and material left behind, bunkers, fortifications, preparations of defensive positions, and minesweeping. With the use of helicopters in tactical operations, engineer teams prepared forward landing zones (Ploger, 2000, p. 91).

Air mobility. Air mobile engineers and equipment increased capabilities even more. Engineers could now be transported to forward and remote areas to support camps and fire support bases with mobility and survivability structures (Ploger, 2000, p. 91).

Present Day

Operations Enduring Freedom and Iraqi Freedom have brought unique challenges to the Military Police Corps and support of operations there. Military Police units continue to perform traditional MP missions but also assume responsibility of training Iraqi and Afghani Police officers while establishing a fledgling police system to support the newly established government. These programs fall under one Military Police Brigade in theater and supplement the combatant commanders within each Multi-National Division. One MP Brigade conducts internment operations, handling all detainees in the theater. The shortage of MP soldiers to support the war fight has led to their traditional missions being performed by combat arms soldiers, an obvious role reversal from earlier military history.

MP doctrine and training are having a direct impact on the current face of battle and how the combined arms fight is developing today. With future battles and new doctrine being developed, the military police unit is ever-changing. The special ability of the Military Police to move and communicate with great speed combined with the heavy fire power it brings to the fight enhances the combatant commander's ability to fight and win. Combine the doctrinal mission of the MP Corps with the current operating environment and the MP support becomes an even greater combat multiplier on today's battlefield. The increased value that the Military Police Unit brings to each conflict is evident in the overall increase in the end strength of the Corps by over 15,000 soldiers over the next 3 years. In a future where a small force structure would be used in low intensity conflicts worldwide, military police could be expected to play an increasingly important operational role.

The assets that make the Military Police Corps so valuable in contemporary battlefield doctrine are actually quite similar to those possessed by the Marechaussee Corps in the Revolutionary War. While traveling a difficult road to organizational permanence and recognition as an organic element of the Army's fighting team, military police have along the way carefully evolved and adapted their mobility and communications capabilities to a myriad of new duties and responsibilities, making the Corps both capable and ready to assume greater responsibilities and duties in the combined arms operations of the future.

Military police are currently used in their traditional roles in protecting prisoners and transporting prisoners of war. They are used to protect commanders and secure convoys from one location to another. The biggest roll they are playing is training the local police to establish law and order in their towns and provinces. Military Police patrol the operating bases and investigate crimes committed by Soldiers. They are detailed to investigate the handling of detainees and the conduct of Soldiers. Like the infantry Soldier the Military police will be called upon to play many rolls in security and law enforcement activities.

Many of the present day intelligence disciplines have existed in one form or another for several decades. However, with technological advancements, “new” disciplines have been created.

ALL SOURCE intelligence is defined as the intelligence products, organizations, and activities that incorporate all sources of information and intelligence, including open-source information, in the production of intelligence (FM 2, chapter 5, 2004).

HUMINT- the collection by a trained HUMINT Collector of foreign information from people and multimedia to identify elements, intentions, composition, strength, dispositions,

tactics, equipment, personnel, and capabilities. It uses human sources as a tool and a variety of collection methods, both passively and actively, to gather information to satisfy the commander's intelligence requirements and cross-cue other intelligence disciplines (FM 2, chapter 6, 2004).

IMINT is intelligence derived from the exploitation of imagery collected by visual photography, infrared, lasers, multi-spectral sensors, and radar. These sensors produce images of objects optically, electronically, or digitally on film, electronic display devices, or other media (FM 2, chapter 7, 2004).

SIGINT is a category of intelligence comprising either individually or in combination all COMINT, ELINT, and FISINT, however transmitted. Intelligence is derived from communications, electronics, and foreign instrumentation signals. SIGINT has three subcategories:

COMINT – The intelligence derived from foreign communications by other than the intended recipients.

ELINT – The technical and geo-location intelligence derived from foreign non-communications electromagnetic radiations emanating from other than nuclear detonations or radioactive sources.

FISINT – Technical information and intelligence derived from the intercept of foreign electromagnetic emissions associated with the testing and operational deployment of non-US aerospace, surface, and subsurface systems. SIGINT provides intelligence to the commander based upon intercepted communications and provides transmitter location data. (FM 2, chapter 8, 2004).

MASINT is technically derived intelligence that detects, locates, tracks, identifies, and/or describes the specific characteristics of fixed and dynamic target objects and sources. It also includes the additional advanced processing and exploitation of data derived from IMINT and SIGINT collection (FM 2, chapter 9, 2004).

TECHINT is intelligence derived from the collection and analysis of threat and foreign military equipment and associated materiel. The strength of the US military lies, in part, to the diversity and extent of its technology base. While the US aspires to be the leader in integrating technology, the threat can achieve temporary technological advantage in certain areas by acquiring modern systems or capabilities. The world arms market is willing to provide these advanced systems to countries or individuals with the resources to pay for them. A concerted TECHINT program is vital to providing precise direction and purpose within the US R&D process to ensure quick and efficient neutralization of this advantage (FM 2, chapter 10, 2004). CI counters or neutralizes intelligence collection efforts through collection, CI investigations, operations, analysis and production, and functional and technical services. CI includes all actions taken to detect, identify, exploit, and neutralize the multidiscipline intelligence activities of friends, competitors, opponents, adversaries, and enemies. It is the key intelligence community contributor to protect US interests and equities (FM 2, chapter 11, 2004).

Present day dental operations have progressed far beyond what any war fighter thought that it almost seems remarkable. Today's Soldiers enjoy a level of dental support in excess of what most of the world's population receive, even in the cities advanced clinics. The ability to treat the Soldier both on and off the battle field have improved and with this improvement we see a great reduction in the time any single Soldier must be away from their unit because of dental emergencies. Our standard for today's deployment is that a dental provider will see each Soldier

prior to deploying. This ensures we meet every reasonable dental care and deal with any preexisting conditions prior to the Soldier departing. This standard of care again reduces the absenteeism rate for Soldiers and ensures that everyone in the AOR is dentally healthy. Post deployment screenings are also the norm and this reduces the amount of time a Soldier may be away from their unit by identifying problems that will become greater with time. Both measures along with self-care significantly reduce dental problems and allow the Soldier to focus on the job at hand rather than their aching tooth.

Engineers provide multi-facet functions within ongoing operations of today. As technology advances so has the flexibility of engineers. Engineers are heavily involved in defeating the improvised explosive device threat and maintaining and construction of numerous facilities. The asymmetric warfare of today continually expands the engineers' role to keep pace.

Engineers are now used to not only build structures and runways, but they are used to clear routes and detect for improvised explosive devices (IEDs). Engineers are now able to detect and destroy these devices. Engineers are used to reduce obstacles so the infantry can attack an objective. The engineer is valued as one of the most important assets the infantry soldier has at his disposal. Engineers put together explosive devices and the detect mines in a given area. The Engineer is an intricate part of planning an operation. They can determine what types of explosives will be needed. The engineer is used to separate and destroy captured enemy equipment and ammunition. They secure roadways and build defensive obstacles to sustain the force. Many forward operating bases are designed and fortified by engineers. The engineers are responsible for constructing all of the protective barriers and wire obstacles use to protect against the enemy. The engineers are also able to build and designed the logistical support systems required to run a forward base. They work closely with contractors and incoming supplies to

design a suitable living environment. The light equipment engineers operate all the equipment to build roads, dig ditches, and fill in HESCO bastions to outline the protection barriers of a forward operating base. These engineers are also used to help train the local civilians, Army and Police force on protection techniques and security measures for the fortification of their respective areas.

With the Army ongoing transformation, engineers must keep pace with the demanding requirements. To accomplish this, redesign of the engineer structure from mission based to capability based, provide the most critical and frequent engineer capabilities to the Brigade Combat Team. Maximizing the effectiveness of engineers on today's full spectrum operations is vital. Engineers help the fight advance, protect the force, and help the economic structure to progress.

Conclusion

The combined arms fight is won only with a true connection of harmony throughout the services. We must learn to play many rolls in battle within our profession spectrum. The Soldier must be flexible and able to adapt to any environment he or she is placed in. We must be able to use every asset we have available to us to achieve victory in battle. Every asset must be brought together at one point in time to mass combat power. Victory will only be achieved with the help of every available Soldier.

Combined arms operations have always included engineer's use of tools and techniques to perform a variety of tasks in mobility, counter-mobility, survivability, and general engineering. An essential element of engineer versatility remains a common strength engineers have established throughout all conflicts. Their roles increased as technology and armies expanded into larger and more developed fighting forces. Engineers have been involved in

combined arms operations since the beginning of the Corp of Engineers. Without the essential capabilities of the engineers, the effectiveness of combined arms operations would not sustain in operations of today.

References

- American Revolutionary War - Wikipedia, the free enc..* (2007) (1). Retrieved November 7, 2007, from http://en.wikipedia.org/wiki/American_Revolutionary_War.
- Anderson, R. (2000). *US Army in World War II* (Engineers in World War II). Retrieved October 18, 2007, from <http://www.militaryhistoryonline.com/wwii/usarmy/engineers.aspx>.
- CIA.gov. (2006, July 6). (civil war/docs). Retrieved November 7, 2007, from
- Commanding General. (1986, May 30). *General Order 22.*, U.S. Army.
- Engineers In The Civil War.* (2002, March 7) (1). Retrieved October 18, 2007, from <http://www.civilwarhome.com/engineers.htm>.
- Engineers in the New Army.* (2007) (1). Retrieved 22 October 2007, from <http://www.usace.army.mil/publications/misc/un21/c-1.pdf>.
- The Essayons(Combat Engineers).* Retrieved October 18, 2007, from <http://www.angelfire.com/nc3/tracker/index.html>.
- Finnegan- *World War II Military Intelligence at the C..* (2001, September 10) (Chapter 5 p. 82-83). Retrieved November 7, 2007, from <http://www.army.mil/CMH/books/Lineage/mi/ch5.htm>.
- Finnegan- *Vietnam and Beyond.* (2001, September 10) (Chapter 9, p.4). Retrieved November 7, 2007, from <http://www.army.mil/CMH/books/Lineage/mi/ch9.htm>.
- FM 19-1.* (1988) [Military Police Support for the Air Land Battle]. U.S. Army.
- FM 2, chapter 10.* (2004) (p. 10-1) [Intelligence]. U.S. Army.
- FM 2, chapter 11.* (2004) (p. 11-1) [Intelligence]. U.S. Army.
- FM 2, chapter 5.* (2004) (p. 5-1) [Intelligence]. U.S. Army.
- FM 2, chapter 6.* (2004) (p. 6-1) [Intelligence]. U.S. Army.

FM 2, chapter 7. (2004) (p. 7-1) [Intelligence]. U.S. Army.

FM 2, chapter 8. (2004) (p. 8-1) [Intelligence]. U.S. Army.

FM 2, chapter 9. (2004) (p. 9-1) [Intelligence]. U.S. Army.

The Making of America and Her Independence. (2006) (The History of the Army Corps of Engineers) (1). Retrieved October 18, 2007, from http://www.americanrevolution.com/his_engineers.html.

Military Intelligence. (2007). Retrieved November 7, 2007, from <http://library.thinkquest.org/CR0210341/militaryintelligence/militaryintelligenceservice.htm>.

Military Police Corps. (2007) (Page 1). Retrieved 10 Nov 2007, from <http://www.globalsecurity.org/military/agency/army/mp.htm>.

Military Police Unit Histories. (2007) (Page 1). Retrieved 10 Nov 2007, from <http://www.wood.army.mil/usamps/HISTORY/MPunitHistories/Companies.htm>.

Military police: Definition and Much More from Answer.. (2007, April 1) (Page 1). Retrieved 10 Nov 2007, from <http://www.answers.com/topic/military-police>.

Ploger, M. G. R. R. (2000). *Vietnam Studies, U.S. Army Engineers, 1965-1970*. U.S. Government: Washington D.C., 1974 (Engineers in Vietnam). Retrieved October 18, 2007, from <http://www.army.mil/cmh-pg/books/Vietnam/Engineers/index.htm#contents>.

The Prisons Of The Civil War Overview. (2005, February 7) (Page 1). Retrieved 10 Nov 2007, from <http://www.civilwarhome.com/civilwarprisons.htm>.

Stanton, S. (1981). Vietnam Order of Battle. *Washington: U.S. News and World Report*, pp. 176-178.

Weber, M. (1981). Civil War Concentration Camps. *The Journal of Historical Review*,
2(Volume 2 number 2), 137. Retrieved 10 Nov 2007, from
http://www.ihr.org/jhr/v02/v02p137_Weber.html.