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**TRANSFORMING IN WAR:  
THE ARMORED INFANTRY BATTALIONS OF WORLD WAR II  
A SMALL UNIT CASE STUDY**

**BY**

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## ABSTRACT

AUTHOR: Lieutenant Colonel Steven Corbett  
TITLE: Transforming in War: The Armored Infantry Battalions of World War II, A  
Small Unit Case Study  
FORMAT: Strategy Research Project  
DATE: 6 March 2001 PAGES: 44 CLASSIFICATION: Unclassified

The United States Army has been “transforming” for over two hundred years. Concentrated periods of simultaneous revisions in doctrine, equipment, and manning structure such as are proposed for the 21st Century Army occur rarely. The Army as an institution tends to focus upon: designing, procuring and fielding new equipment; doctrinal development and validation; and force structure design and development. The integration of the individual soldier and his small unit leaders in the process of comprehensive change or transformation is poorly understood and rarely recognized. This case study examines a family of units, the Armored Infantry Battalions of America’s World War II armored divisions, for small unit lessons in the transformation process. In a concentrated period of time, these battalions underwent multiple equipment and doctrinal transformations concurrent with massive personnel turnover, major exercises, unit moves and ultimately, the crucible of combat in the European Theater of the Second World War. The perspectives and experiences of small unit leaders and soldiers who were participants are winnowed to develop working recommendations for small unit leaders in current Army Transformation.



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## Dedication

Most of these men are dead now. The rest soon will be, for those who escaped the maw of war cannot long escape the maw of time. Today they range from merely aged to truly ancient. Their deeds are sadly unknown and under-appreciated even by those who love and know them best, for they are quiet men. The Army that they served never adequately recorded their accomplishments, except perhaps as footnotes in seldom-read books. But they helped destroy Adolf Hitler.

They are the Armored Infantrymen of the Second World War. They fought as members of the sixteen American armored divisions that chopped through the Nazi armies of North Africa, Italy, and Western Europe. Even in their own time they were unknown--the headlines usually read, "Patton's Tanks Reach the Seine," or "Armored Thrust Across the Rhine." The image was always of a man in a tank, not some muddy dogface with a rifle in his hands.

These were infantrymen. They fought and bled and died in the dust and mud and snow. They grimly gnawed through the villages of France, Belgium, and Germany. They learned as they went along, because their way of warfare was new to America. They ripped through German lines and barreled across Europe into the Nazi heartland in half-tracks or on the backs of tanks, but they still had to root the enemy out one by one, building by building. There were a hundred thousand of them, and a quarter of them never came back from the war. Less than a tenth of them survive today.

The Armored Infantrymen of World War II evolved rapidly. In 1940, there were no such soldiers or units in the American Army. By May 1945, there were sixteen divisions worth of them. During their evolution, they underwent three major changes in organization and, for most of them, two complete changes in equipment in less than three years. Many of these outfits went half-formed to fight in the greatest conflagration in the sad, violent history of mankind. The Armored Infantrymen of World War II was the classic "transformer." He adapted to new equipment, innovated new tactics as he learned, gained and lost key leaders during the incredible force expansion of total mobilization -- all the while fighting a war and absorbing combat replacements.

This work is dedicated to the veterans of the 4th, 5th, 6th and 7th Armored Divisions who unlocked their memories and experiences to me. This study could not have been written



without their assistance, or their selfless service in the cause of our nation. May we, the soldiers of the 21st Century Army be worthy successors.

“Breakthrough”

“Victory”

“Super Sixth”

“Lucky Seventh”

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**transform;** 1 to change the form or outward appearance of 2 to change the condition, nature of function of, to convert 3 to change the personality or character of. —Webster's New World Dictionary of Standard American English, 1988 Edition

## PART 1. RATIONALE AND METHODOLOGY

The United States Army has been "transforming" since the 14th of June 1775, when the Continental Congress established a standing force. The evolution of the Army, is constant-- nothing ever truly stands still. What are the components of "transformation?" It is not simply change - it is the creation of an entirely new force that is radically different upon multiple levels. Organization, equipment, doctrine and capabilities must all become substantially different before a transformation has occurred. Additional turbulence created by unit moves, personnel replacement or rotation, and the nuances of unit leadership can all multiply the effects of transformation. Concentrated periods of *simultaneous* revisions in equipment, training, structure and doctrine occur only rarely in our Army's history. As new equipment arrives in units, as organizational structure and manning is radically changed, and as organizational culture itself is rent by fluctuations in personnel, the impacts of transformation are myriad. They are also potentially destructive, rather than constructive.

As the modern American Army struggles to "transform" itself for 21st Century warfare, we must remember that any force fielded by our nation is built by, with, and for the soldiers who compose it. Privates and sergeants and their junior officers must adapt to the challenges of major transformation and change, as well as senior officers. The US Army has acquisition cycles, Project Managers, System Managers, modeling facilities, and fielding teams that place new equipment and doctrine into the hands of our troops. *How do the troops themselves handle all of this?* How does a platoon sergeant convince his soldiers that constant changes in kit and organization are both necessary and good things? How does a young squad leader work through in his own mind that "transforming" will bring him and his soldiers back from war in both of those two all-important states: alive and victorious?

Although change is indeed a constant in the life of the individual soldier and his outfit, simultaneous changes or transformation in equipment, organization and manning is relatively infrequent. Thankfully, the instance of simultaneous transformation on multiple levels occurring

concurrent with frequent unit moves and massive personnel turbulence is even more rare. The ability to accept, manage, rationalize and inculcate change in order to make the eventual outcome a victorious one in combat is a testament to the small unit leader.

At no time in the history of Americas Army has turbulence, change and transformation probably been more pervasive than in the rapid modernization, mobilization and expansion of the infantry formations of Americas World War II Armored Force. An examination of this extreme example of transformation through the eyes of the soldiers involved may be instructive for modern Army leaders as we transform our current force.

Between 1940 and 1945, the American Army formed and fielded sixteen Armored Divisions that eventually fought in over fifty battles and campaigns in World War II.<sup>2</sup> Along the way, the infantry formations of these divisions transformed into a force utterly unlike their origins. The units selected for this study were originally formed as four regular, foot-borne infantry regiments armed with rifles, some machine guns, and a few trucks. By the end of the war, they had been transformed into a dozen self-contained and highly lethal separate battalions, equipped with armored personnel carriers, self-propelled anti-tank systems, a plethora of machine guns, and their own unique, mobile combat doctrine---largely self-taught. Some of the units selected for this study underwent sixteen major change events: major and minor TOE changes; unit moves; massive personnel rotations and the eventual crucible of combat. This work is not intended to be a comprehensive history of the Armored Infantry, although one is long overdue. In order to focus the scope of this study, it is limited to the affected units of four Armored Divisions, the 4th, 5th, 6th and 7th. These outfits were selected because the infantry units of these divisions were originally formed between 15 April, 1941 and 1 March, 1942<sup>3</sup> as regular infantry and underwent each of the major subsequent transformations directed by the War Department and Armored Force Center, (currently the U.S. Army Armor School). Unlike the 1st, 2nd and 3rd Armored Divisions, these divisions underwent their first trial by fire in the evolved form of "light" armored divisions, with their infantry organized as separate battalions, (Table 1).

Table 1. Case Study Unit Pedigrees

**Division                      Original Regiment                      Separate Battalion**

4th Armored	51st Inf Rgt	10th AIB 51st AIB 53rd AIB
5th Armored	46th Inf Rgt	15th AIB 46th AIB 47th AIB
6th Armored	50th Inf Rgt	9th AIB 44th AIB 50th AIB
7th Armored	48th Inf Rgt	23rd AIB 38th AIB 48th AIB

This study focuses upon the impacts of transformation in the Armored Infantry at battalion level and below. It examines the theory for changes as contained within official documentation, and the practice of transformation as experienced by the junior participants. Particular attention is paid to critical leadership challenges, and the methods used to overcome them. This paper examines in part the impacts of transformation and change upon the morale and confidence of soldiers and units as they moved inexorably toward grappling with the most lethal force on the earth in 1944--the German Wehrmacht.

## **PART 2. ARMORED FORCE EVOLUTION**

To understand the fabric within which the Armored Infantry Battalions (AIBs) evolved, a basic understanding of the evolution of the U.S. armored division in World War II is necessary. Among the principal combatants of the war, the United States was particularly slow to adopt a coherent armored formation within its army. As early as 1934, Adolf Hitler recognized the utility of large armored formations and ordered the establishment of Germany's first Panzer Division. By 1935, the German Wehrmacht had added two more divisions.<sup>4</sup>



Similarly, in 1934 the British Army experimented with a division-sized mechanized force which incorporated armor and infantry brigades. This experiment suffered from branch parochialism and such institutional conservatism that valid field trials were hamstrung by funding constraints and deliberate testing artificialities. The British did not formally field a true armored division, (the 1st) until immediately prior to it's deployment and ultimate destruction in France in 1940.<sup>5</sup>

Although certain French officers argued the intellectual underpinnings of large armor formations as early as 1919, they were unable to form a light armored division until 1934. Much like their British counterparts, however, this work was haphazardly supported and, despite the strident urgings of a young Charles De Gaulle, a true French armored division did not, coincidentally, make it's debut also until 1940<sup>6</sup>.

#### THE AMERICAN VIEW.

During the inter-war years, the United States Army was influenced by the French Army. In fact, the 1923 American manual, Provisional Manual of Tactics for Large Units was actually a word for word translation of the French 1921 manual of a similar name.<sup>7</sup> American experience with tanks during World War I had been limited. It was largely trained and equipped by the French, with a few soldiers training with British tank elements. American armored force development, such as it was, continued to be influenced by the French, including the use of outmoded surplus French tanks. Following the war, tank development and training was assigned to the Chief of Infantry, with a small tank school maintained at Fort Meade, Maryland until it moved to Fort Benning in 1932.<sup>8</sup> During the interwar years, an occasionally bitter dialog raged regarding the role, capabilities of, and branch proponency for the tank, and armored forces in general. Largely through the persistent efforts of cavalryman Adna Chaffee, the Army struggled to continue developing the theory and equipage of mounted warfare into the late 1920's and 1930's. As Chief of Staff of the Army, Douglas MacArthur mandated an Army-wide effort at mechanization. However, MacArthur's directive was hamstrung by fiscal woes as the Depression deepened.<sup>9</sup> After MacArthur's departure in 1935, development of both armored vehicles and an organized armored force waned, although Chaffee's under-resourced work continued at Fort Knox under the auspices of the Cavalry School.<sup>10</sup>

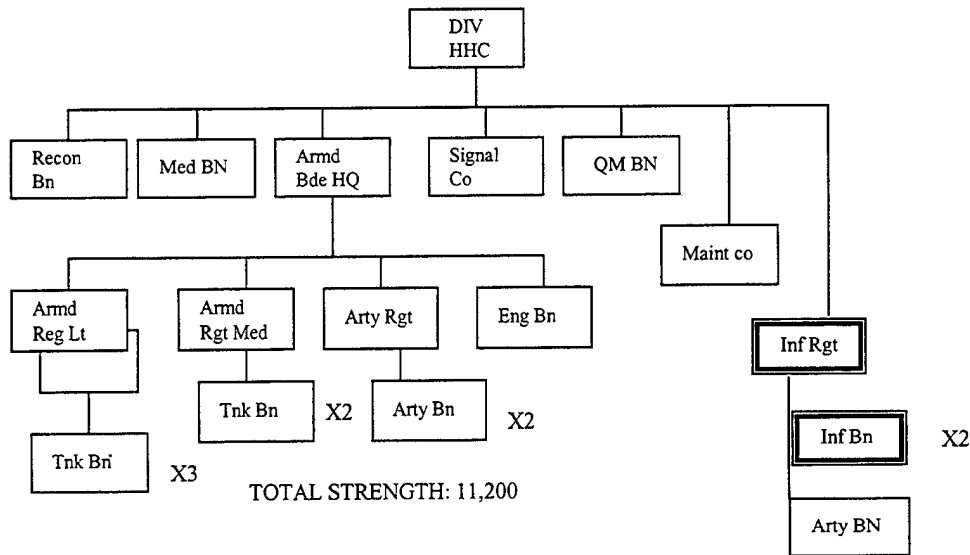
The American Army did have a small coterie of officers who were proponents of an armored force. In 1930, Colonel James Kelly, the Commandant of the Tank School, proposed the formation of six armored divisions. Although the fiscal realities of the Depression-era Army made this proposal a mere academic exercise, it is remarkable to note the similarities between Colonel Kelly's proposal, and the 1940 version of the U.S. Armored Division that was eventually accepted.<sup>11</sup>

By September 1939, when Adolf Hitler launched ten Panzer Divisions in support of the Nazi invasion of Poland, America did not possess a single armored unit larger than two ad-hoc experimental brigades, one at Fort Knox and the other at Fort Benning. As German armored forces demonstrated their full power in the May 1940 invasion of France, the United States Army found itself desperately scrambling to make up lost time. In July 1940, the Chief of Staff, George C. Marshall, ordered the creation of an Armored Force. The Armored Force was independent of the other arms of the service, and utilized the two experimental brigades at Fort Knox and Fort Benning to form the nuclei of the 1st and 2nd Armored Divisions.<sup>12</sup> America had finally entered the arena of armored warfare.

#### AMERICA'S ARMOR DIVISIONS

When the 1st and 2nd Armored Divisions were established on 15 July 1940, they adopted as their original structure a melding of the 1939 pattern German Panzer Division, and some results of the interwar armored and cavalry force experimentation.<sup>13</sup> Illustration 2 depicts the initial armored division organization of 1940. The force was built for speed, shock action and almost purely for offensive operations. As constituted, the centerpiece of the division was an armored brigade, consisting of two regiments of light tanks, a regiment of medium tanks, a two-battalion regiment of artillery, and an engineer battalion. The division's infantry arm was comprised of a two-battalion regiment of regular, "leg" infantry that included its own artillery battalion. A reconnaissance battalion mounted in light-skinned vehicles provided intelligence, and support for the division was provided by quartermaster and medical battalions, a signal company, and an ordnance maintenance company.<sup>14</sup>

ILLUSTRATION 1, 1940 ARMORED DIVISION  
STRUCTURE



Once the American army got an armored division, tinkering with its structure and organization began almost immediately. The results of field maneuvers in the summer and fall of 1941 and wartime experiences of the British and Germans soon mandated major transformation of the divisions. Experience in the 1941 maneuvers indicated that the division was indeed fast, but lacked adequate infantry strength to perform critical missions such as security, defense and reconnaissance in force.<sup>15</sup> Additionally, the use of anti-tank elements in the defense proved the vulnerability of light tanks. The division also proved cumbersome to command and control, utilizing the single Armored brigade as its principle fighting headquarters. As a consequence, the divisions were reorganized in March 1942 with some significant changes. The armor Brigade was disbanded, and in its place, two "combat commands" were organized to enhance flexibility and reduce the span of control. The infantry regiment was increased from two battalions to three, and the ratio of medium tanks to light tanks was greatly increased to increase firepower and survivability at the expense of some speed of movement.<sup>16</sup>

The March 1942, organization soon came under fire from several quarters, most notably LTG Leslie J. McNair, the Commander of Army Ground Forces. Faced with competing

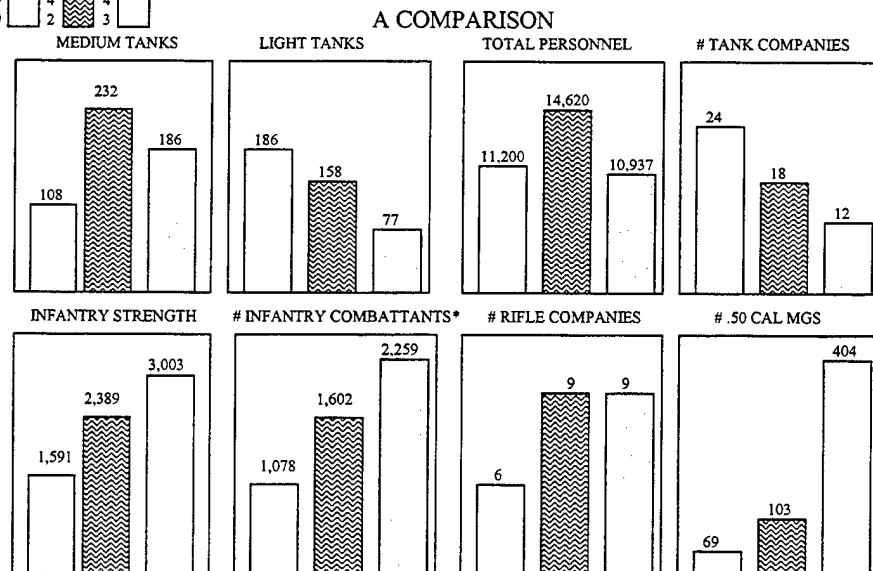
demands for manpower, McNair viewed the armored divisions as grossly over-manned. Not noted as a major proponent of the Armored Force, McNair's opposition was based upon two pillars. He suspected that the armor division was "over-equipped" and as the builder of America's wartime divisions, McNair needed to hone manning levels to their thinnest possible edge. Of the March 1942 division he said, "The present armored division is fairly bogged down by a multiplicity of gadgets of all kinds...In the matter of size, cost and complication, as compared with the number of tanks which can be used against the enemy, the armored division presents an amazing picture of unjustified extravagance."<sup>17</sup> Even the most ardent proponent of armor could detect McNair's lack of subtlety. Cuts were forthcoming.

The Armored Division of September, 1943 looked significantly different from its immediate forebear. Table 2 enumerates the changes between the two formations, but several key differences must be highlighted.<sup>18</sup> A principle behind the divisional restructuring was the philosophy of attachment and detachment. The combat formations of the armored division were reorganized to facilitate the ability to move self-contained, battalion sized force packages to and from diverse headquarters.<sup>19</sup> Significantly for the tank and infantry, this obviated the need for regimental headquarters. These were reorganized into three separate battalions, each complete with organic service companies for logistics, and larger headquarters elements for command, control and supporting arms.<sup>20</sup> Battalion commanders found their personal concerns now included logistics and supporting arms.

Not all armored divisions were reorganized into this 1943 light armored structure. Both the 2nd and 3rd Divisions remained organized under the March 1942 structure, with some partial reductions in ancillary services and equipment, (some of General McNair's "gadgets ...and extravagance"). America's remaining fourteen tank divisions were, however, affected by this major change. For those divisions that had already been called into service and were in the process of formation, these changes were significant.

1 9 4 0 1 9 4 3 1 9 4 3

TABLE 2: 1940, 1942 AND 1943 ARMORED DIVISIONS



\*Excludes Maint, Med, Etc

### INFANTRY IN THE ARMORED DIVISIONS

The mission of the infantry arm of the division as envisioned in 1940 was to follow armored attacks, and to secure ground as it was overrun by tanks. At night and at halts, the infantry was expected to establish outposts, conduct local patrols and otherwise provide security for the tanks of the division.<sup>21</sup> The force was mounted in either wheeled scout cars, or rode in 2 1/2 ton trucks.<sup>22</sup>

The American theory of infantry operations within armored divisions was the child of diverse influences. Early reports of the successful operations of German Panzer divisions in Poland and France relegated the infantry formations to secondary roles in security, or perhaps even tertiary roles in less glamorous tasks such as guarding command posts and prisoners of war.<sup>23</sup> As reports of British operations in North Africa began to influence the Armor Center, the roles of infantrymen enlarged to include patrolling, mine clearing and flank security. During the summer and fall maneuvers of 1941, the opposing forces extensive use of anti-tank guns in wooded and complex terrain indicated a clear need for infantrymen in the offense, to clear villages and wooded terrain that could mask enemy anti-tank weapons.<sup>24</sup> The clear need

emerged to increase the ratio of infantrymen to tanks, as well as to design a vehicle in which the infantry could move at the same speed as attacking tanks.

### **PART 3. ARMORED INFANTRY EXPANSION AND REORGANIZATION**

As with nearly every other branch of the Army, the numerical expansion required of the infantry during World War II is staggering. In 1939, there were slightly over 40,000 infantrymen in the United States Army, approximately twenty-five percent of the total strength. By mid-1941, there were nearly 380,000 infantrymen on the books in 136 regiments. By August 1945, the American Army possessed about a million infantrymen in 317 regiments and 99 separate infantry battalions<sup>25</sup>--a twenty-five *hundred* percent increase in strength, and approximately a hundred-fold increase in number of units. It is important to remember, however that the United States Army had *no* armored infantry formations prior to July 1940. These units were being conceptualized literally as they were physically created.

The original infantry formations organic to the armored divisions were regular, "leg" infantry regiments, with three major differences: they had only two battalions vice three, they lacked organic anti-tank systems, (the theory being that the divisions tanks would provide that capability in the rare instances of defense), and the infantry were allocated sufficient numbers of trucks and wheeled armored cars to allow the entire division to move mounted.<sup>26</sup> The re-designation of these formations to an *Armored* Infantry Regiment in the March, 1942 version of the armored division added a third maneuver battalion, upgraded all transport from trucks to armored cars, (which were generally still in short supply), and increased the number of support troops commensurate with the increase in vehicles.<sup>27</sup> The regimental headquarters was maintained for command and control. A major deficiency in this organization was the failure to increase the size of the rifle squads to incorporate the need for a vehicle crew--somebody had to drive, and someone else had to man the organic machine gun. The Commanding General of the 1st Armored Division felt that this oversight reduced his infantry strength by a battalion.<sup>28</sup>

Significant change was wrought by the September 1943 "Light Tank Division" reorganization. The regimental headquarters was abolished in favor of three large battalion headquarters. As previously noted, the battalions added organic logistics and medical support, and the size of each squad was increased to accommodate the need for vehicle crews. Significant upgrades in equipment to include new families of tracked vehicles, new anti-tank

systems, and adding a plethora of machine guns increased unit organic firepower fivefold.<sup>29</sup> Although there were six subsequent changes to the basic document, the Table of organization of September 1943 was the force that would be taken to war in the summer of 1944, and would close on Berlin in May of 1945. (T/O 7-27) Table 3 on page 12 summarizes the changes in the armored divisions infantry arms from 1940 to 1943.<sup>30</sup>

The collective changes of the armored division's infantry formations from 1940 through 1943 gave structure to the transformation process. The AIBs of September 1943 were nearly unrecognizable from their original "leg" infantry parent. Out of the chrysalis of a two-battalion, "leg" infantry regiment in the summer of 1940 emerged the self-contained, fully mechanized and highly lethal separate Armored Infantry Battalion of 1943.

The AIBs of the 4th and 5th Armored Divisions were activated as regular infantry regiments, and reorganized as armored infantry regiments in April and December 1941 respectively. The AIBs of the 6th and 7th armored divisions were initially constituted as armored infantry regiments in January and February 1942.<sup>31</sup> The theoretical sequencing of mobilization and training looked generally like this:

- Activation

- Formation of leader cadres

- Arrival of enlistees/draftees

- Initial training (basic training for most soldiers, with specialist and technical training provided for officers and NCOs)

- Weapons and equipment training (radios and vehicles)

- Small unit tactical training (at mobilization site)

- Platoon and company level training (at mobilization site or alternate maneuver area)

- Battalion level training in conjunction with division maneuvers, (usually at Camp Cooke, California or the Desert Training Center in Southern California)

- Company, Battalion and Division level formal training evaluation and testing, (usually in conjunction with field maneuvers in the Tennessee or Louisiana Maneuver Areas). These were promulgated and administered by the War Department

- Re-stationing in preparation for overseas movement

- Overseas deployment, (often followed by further training in England).<sup>32</sup>

Such was the theoretical evolution of a mobilized division prior to deployment and employment overseas. The plans of the Army Ground Forces and the realities of transformation and simultaneous mobilization were an altogether different story. Illustration 2 on page 13 traces the history of the 46th Infantry from its reactivation on 28 December 1941 until inactivated on 3 October 1945.<sup>33</sup> This illustration provides a graphic example of the potential for chaos and lack of synchronization in the mobilization process, at least for armored divisions. As depicted, significant changes in unit equipment and major training events were frequently conducted out of sequence.

The experiences of the 46th Infantry on the road to transformation may have been extreme, but were certainly not unique. Heretofore in this study, the evolution of this turbulent transformation into armored infantry battalions has been described via organizational changes and the development and employment of new weapons and vehicles. What of the true hub of transformation--the soldiers who were affected by all of this? The following sections of this study will examine each element of transformation, (organizing, equipping and doctrine), and its effect upon the soldier and his leaders at small unit level. The effects of other sources of turbulence such as unit moves, personnel fluctuations and leadership changes as they affected the transformation process will also be highlighted.



**TABLE 3, COMPARISON OF 1940 INFANTRY AND 1940-43 ARMORED INFANTRY COMPANY**

**BOLD** denotes change in type of equipment or model from previous T/O

DATE	PERSONNEL Officer/Enlisted	VEHICLES	WEAPONS Greater than M-1 Rifle	NOTES
Oct 40 T/O 7-17 "Regular Inf"	6/188	(1) Jeep	(4) .30 LMG (3) 60mm Mortar (6) BARS	
Nov 40 T/O 7-27 "Armored Division Rifle Co in Armored Infantry Regiment"	6/210	(5) Half Track Cars (14) Half Track Personnel Carriers (3) Motorcycles (1) Motor Tricycle (4) 2-1/2 Ton Trucks	(7) .30 LMG (6) .50 HMG (3) 60mm Mortar (23) .45 Submachine guns (24) .30 HMG	T/O also contains (1) Bugler
Mar 42 T/O 7-27 "Rifle Company, Armored Infantry Regiment"	6/245	(4) Half Track Cars- M2 20 Half Track Personnel Carriers, M3 (1) Half Track with winch (maint and recovery section) (3) Jeeps (2) 2-1/2 Ton Trucks	(7) .30 LMG (25) .45 Submachine Guns (3) 57mm Anti tank Guns (1) Self-propelled 37mm AT Gun (1) .30 HMG (1) .50 HMG (5) 2.36" Rocket Launchers, M-1	T/O added an anti-tank platoon to the company
Sep 43 TO&E 7-27 "Rifle Company, Armored Infantry Battalion"	6/245	(3) M1A3 57mm Gun Carriages (16) M3A1 Half Tracks (3) Jeeps (2) 2-1/2Ton trucks	(3) 57mm Anti Tank Guns (10) .30 HMG (6) .30 LMG (1) .50 HMG (25) .45 Submachine Guns (18) 2.36" Rocket Launchers, M1A1 (3) 60mm Mortars (3) M1903 Sniper Rifles	T/O reflects only (8) radios in the company

Change 1, dtd Oct 43 Changes only in ancillary equipment (Example: added camouflage nets)







Change 2, dtd Jan 44: Changed model of 2.36" rocket launcher to M-9, and model of half tracks to M3A2

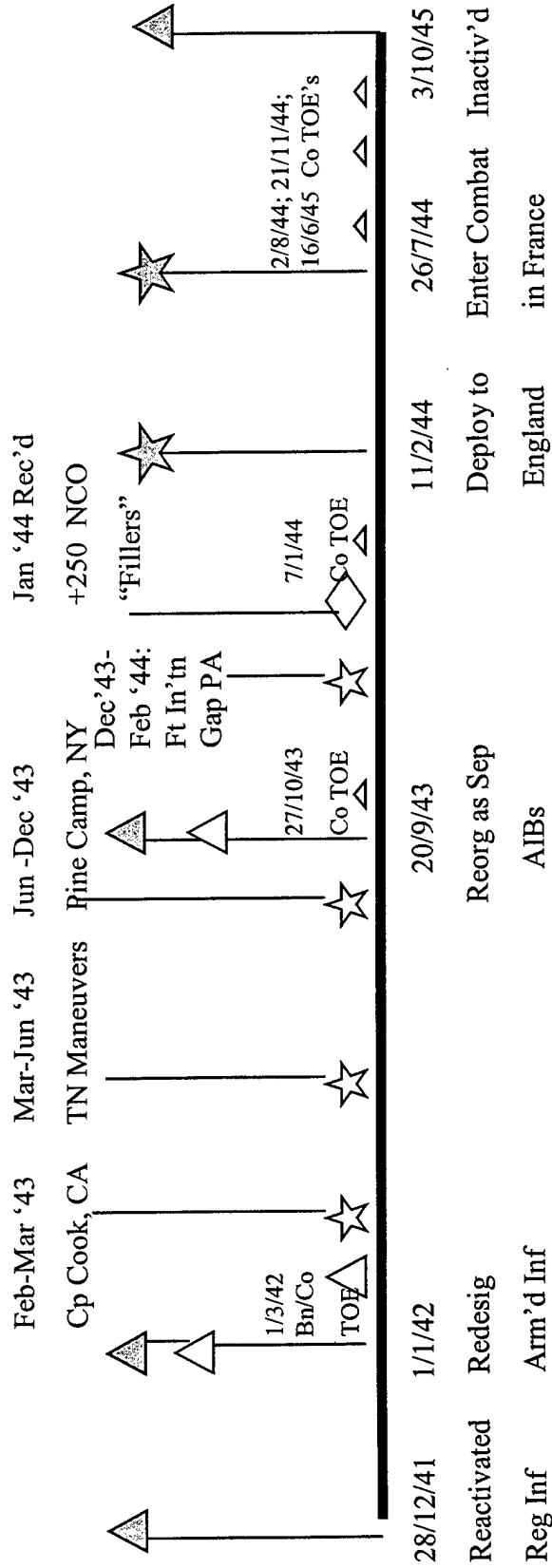
Change 3, dtd Aug 44: Added (18) Grenade Launchers, Changed model of 2.36" rocket launcher to M-9A1, changed model of half tracks to M-3A2, changed sniper rifle to M1-C

# ILLUSTRATION 2: REPRESENTATIVE TIMELINE

## 46TH INFANTRY, 5TH ARMORED DIVISION

**KEY:** (Timeline not drawn to scale)

-  Major Reorganization of Personnel, Structure and Equipment
  -  Major TOE Change (End items)
  -  Minor TOE Change (Ancillary Equipment)
  -  Combat Operations or Overseas Deployment
  -  Training Deployment/Unit Move
  -  Block Personnel Turbulence (non-combat)
- TOE= Table of Organization  
 Ft In'tn Gap= Ft Indiantown Gap, PA  
 Bn= Battalion  
 Co=Company



## PART 4. EFFECTS OF TRANSFORMATION

### ORGANIZING AND EQUIPPING

As infantry T/O's changed and the expansion of the Army accelerated, equipment for mobilizing units arrived sporadically. If the equipment was fielded to units at a division's mobilization site, Ordnance Department personnel were usually available to provide the specialized training peculiar to the equipment. Training on equipment fielded at subsequent CONUS locations or even in the theater of war was oftentimes an exercise in self-development. Some half-track operators were assigned simply because they, "could figure out where the starter was."<sup>34</sup> Soldiers arriving as combat replacements were often a prized commodity because they had some familiarity with fielded weapons such as the bazooka or land mines while in basic training. These weapons were sometimes unused by outfits in combat because the troops were simply issued the items without any training.<sup>35</sup> Not all combat replacements were so technically fortunate. CPL Michael Mastrianni had never seen a .30 caliber water-cooled machine gun before he was assigned as the gunner of one in combat with the 15th AIB.<sup>36</sup>

### DOCTRINE

The "doctrine" of armored-infantry operations in the American Army was virtually non-existent. There were many theories and the evolution of Tactics, Techniques and Procedures, (TTPs) was a product of experimentation from the squad level up to division commanders. A formal doctrine for the Armored Infantry Battalion was not published by the War Department until November 1944, and its sister publication for the Armored Infantry Company the same month. Although useful and reasonably complete for operating at their respective echelons, these manuals did not make their appearance in time to be of measurable use to units in combat.<sup>37</sup> The very existence of these documents was in fact a revelation to many of the veterans interviewed for this study.<sup>38</sup> How then, did leaders learn what to do? Armored Force leaders were tenacious in their search for lessons from field operations and combat experiences. Teams of regimental and divisional commander-designees personally observed combat operations in North Africa, as well as other unit's exercises. G-2 debriefs and foreign military observations were culled to form the basis of a series of Training Memoranda published and distributed to units in 1942, '43, and '44.<sup>39</sup> Unfortunately, the pace of writing did not always

match the speed of mobilization, and varying versions of these memoranda were in use by different divisions simultaneously.

Doctrine was often simply the opinion of the commanding general, based upon their personal experiences and tactical theories. MG Lunsford Oliver, the commander of the 5th Armored Division had commanded CCB of the 1st Armored Division in North Africa. Based upon his experiences there, he directed that the tank and infantry elements of his division be "married", or teamed up from battalion down to the individual tank and infantry squad. These troops billeted and messed together, and habitually operated as one from their introduction into France until VE Day.<sup>40</sup> This "marriage" system, while comparatively inflexible, promoted what many veterans call the most important aspect of armored infantry- tank/infantry communication, cooperation, and "Teamwork-Teamwork-Teamwork (sic)."<sup>41</sup> The 4th Armored Division had a much more flexible system of cooperation, utilizing company and battalion level cross-attachment based upon the factors of METT-T. In contrast to the 5th Armored, many infantrymen in the 4th didn't even know which tank battalion they were operating with from battle to battle.<sup>42</sup>

Basic combat tactics, such as when tanks led attacks and when the infantry led them were often bloody lessons learned on the field of battle.<sup>43</sup> Even the utilization of core equipment such as the half-track was often a matter of personality, sometimes down to the platoon level. Some units discounted the vehicle as simply a means of moving infantrymen to the battlefield<sup>44</sup>, while others placed a heavy premium upon the additional firepower provided by the vehicles organic machine guns.<sup>45</sup> A 9th AIB veteran provides an excellent description of one unit's SOPs,

"As we approached...from behind a hill, some of our tanks took up positions on the rear slope and began firing into the town. First one tank, then another, would crawl up to a point where the gun would clear the hilltop. Fire at a target, back out of sight and another tank, a little farther down the line, would roll up and do the same thing. On and on until the CO thought the town was softened up enough. When the tanks stopped firing, we, the armored infantry, left our half-tracks behind the hill and went toward the town in spread out formation. As we crossed a sugar beet field, we came upon an underground bunker which was flush with the surface and so well camouflaged, I almost fell into the narrow entrance. A few Germans were inside. A sergeant tried to get them to surrender, but they refused. We then fired into the bunker, then entered to make sure of no further resistance...At one building, my squad leader...asked for a volunteer to go into the building with him. He and I entered the building through a large hole our tanks had blown in it. We found no Germans there, but as we came out, the roof was engulfed with flames."<sup>46</sup>

Tactical lessons such as this were all too often learned at the expense of soldiers' lives, rather than through doctrinal development and articulation.

## TRAINING AND UNIT MOVES

The relentless schedule of forming and deploying divisions drove units to execute centrally developed training events and maneuvers that held little regard for the organization of the outfits as they would be fielded in combat, (see Illustration 2). The ultimate value of conducting maneuvers during or prior to periods of intense turnover in personnel, fielding of new equipment, and organizational restructuring must be questioned. Although there may in fact have been few other options during mobilization for a World War, even the participants were dubious, "...the men learned much about soldiering (from the standpoint of) living in the field and long road marches; and some *incidental knowledge of tactics* (italics added) and communications."<sup>47</sup>

Critical, last minute training before employment in combat was also at risk of cancellation. The 5th Armored Division commander planned a series of final exercises after their arrival in England, in order to integrate hundreds of last minute NCO replacements and familiarize everyone with both their equipment and outfits before going into battle. Instead, from April to June 1944, the division was scattered throughout Southern England in order to perform "mayorial" duties in dozens of staging areas for the troops conducting the D-Day invasion.<sup>48</sup> Although many of the armored division men possibly harbored a sense of relief that they would not be hitting the beach, there was an obvious problem with performing housekeeping duties. During the critical final weeks before combat, new squad leaders and lieutenants were unfamiliar with both their men and equipment.<sup>49</sup>

Training of officers and NCOs for the critical technical and tactical nuances of AIB leadership positions in combat was virtually nonexistent. One squad leader arrived in his unit, and participated in his first combat operation on the very night of his arrival. He described his introduction to the half-track as, "up to that time, I had never seen a half track except in the movies. The driver told me where my position was in the vehicle."<sup>50</sup> A 6th Armored Division Platoon Sergeant stated that he had no experience with half-tracks prior to arriving in his

platoon. His doctrinal orientation consisted of a vehicle driver who, "sat me under a tree and explained the differences between regular and armored infantry to me."<sup>51</sup>

The training level of infantry platoon leaders comes in for special criticism. Both platoon sergeants and lieutenants themselves observed a glaring absence of tactical training. Although some officers received a six-week indoctrination course at Fort Benning prior to their assignment, the program of instruction emphasized individual weapons training from the pistol to the .50 machine gun, but little or no practical experience in tactical exercises. As one former lieutenant said, "I remember an awful lot of *talk* (emphasis in original) about fire and maneuver...but we never even got to move a squad of demonstration troops around before I joined my battalion in combat."<sup>52</sup>

Soldiers who arrived as combat replacements in rifle squads had little or no experience with armored infantry. Although many soldiers mostly rode into combat on the exterior of tanks, none of the replacement veterans interviewed for this study had ever ridden in a half-track before their arrival in their units.<sup>53</sup> During the infamous "infantry shortage" of the Winter of 1944, soldiers were transferred from other branches, or had their basic training truncated in order to meet the frantic need to fill the rifle squads of the American Army. One soldier who experienced this described his welcome and integration into his unit as, "...welcome aboard, we're happy to have you because we lost a lot of guys in the Huertgen Forest."<sup>54</sup> After six weeks of "not very good" infantry training at the hands of the New York National Guard, another hapless soldier was transferred from his job as an anti-*aircraft* gunner in the Aleutian Islands to fill a billet as an anti-*tank* gunner in the 47th AIB.<sup>55</sup>

## MANNING

The chaos and pace of mobilization and unit formation of the armored force is difficult to comprehend today. For example, due to the shortage of officers in the 6th Armored Division, then Captain James Moncrief found himself simultaneously commanding both E and F Companies of the 50th Armored Infantry Regiment. His most challenging task appears to have been his stern injunction to his two company supply sergeants not to conduct "moonlight requisitions" of equipment from one another!<sup>56</sup> From mid-February through mid-March, 1942, the 5th Armored Division received nine *thousand* men, or three-fifths of their total authorized strength.<sup>57</sup> The patience and organizational skill necessary for the cadre to form up squads,

platoons and companies, or even to house this overwhelming mass of men would have stunned lesser men into insensibility.

The timing of major injections of key personnel was poor. The 9th AIB of the 6th Armored Division received fifteen NCOs from a disbanding AIB (the 535th) sixty days prior to the 9th's departure overseas.<sup>58</sup> The 5th Armored Division received over 250 NCOs from the 181st Infantry Regiment, (a "leg" outfit), three weeks before leaving for England.<sup>59</sup> The impact upon small unit cohesion, as well as the confidence levels of these newly arrived and anointed armored infantrymen were staggering.<sup>60</sup>

Aside from personnel turbulence due to TOE changes, mobilization augmentation, and arrival of leader cadres, war itself transforms units. Transformation in the very fabric of a unit occurs when losses are suffered, and replacements arrive. This changes the very personality of the outfit. Casualties in Armored Infantry Battalions were generally lower than in many other infantry units fighting in the European Theater. Losses, however, could be severe. One company of the 9th AIB suffered cumulative losses of: 86 killed, 292 wounded and 19 MIA or captured in 10 months of combat--a loss rate that was 185% of the company's T/O strength. During this same period, the company was commanded by seven different officers, one of whom was killed, two wounded and another evacuated due to illness.<sup>61</sup>

## LEADING

A key task for officers during mobilization and unit formation was the selection of junior NCOs from among the hordes of enlisted replacements. Soldiers with any type of previous military experience, or possessing the ability to organize, (or intimidate) a group of strangers were at a premium.<sup>62</sup> Some of these men did well in combat, while others fell short.<sup>63</sup> This injected a continuous source of turbulence through the end of the war that was separate from combat losses.

The sheer turnover of leaders in the AIBs could be staggering. When the 5th Armored Division was established, its cadre formed from officers and NCOs detached from the 3rd and 4th Armored Divisions. When the 5th in turn deployed to Camp Cooke, California in February 1942, they were forced to leave approximately 200 NCOs at Fort Knox to cadre the 8th Armored Division. After six months of relative stability, the division was again levied for an additional 150

NCOs as cadre for the 13th Armored Division in August 1942.<sup>64</sup> Leader "turnover" in combat could be grim. The 38th AIB had seven different men in command of it from 21 August 1944 to 21 September 1944. Three of them were killed and two of the others wounded. Five of these men commanded the outfit on the same awful day- 19 September 1944.<sup>65</sup>

## **PART 5. LESSONS LEARNED**

### **ORGANIZING AND EQUIPPING**

The veterans of the AIBs remain absolutely convinced of the wisdom of combined arms at battalion level and lower.<sup>66</sup> Tempered in training, extemporized and validated in combat, the Armored Infantry Battalions made a signal contribution to victory. Despite the chaotic process of transformation, the concept proved itself. It must be pointed out, however, that this is the view after the fact- at the time, neither these men nor their leaders knew where their outfits were going in terms of structure or equipment that they would carry into battle. Given America's slow start, the chaos of the transformation process in WW II was probably inevitable. A coherent, well-thought-out *in advance* transformation plan was not possible, given the exigencies of World War II. For the purposes of 21st Century transformation, there is not the same frantic need for speed, (and admittedly, waste). The future cannot be read with absolute clarity, but a general objective must be envisioned and articulated to the lowest possible levels of the transforming force. Soldiers and leaders are not well served by nebulous visions in their day to day training and duties. The commander's intent must include some form of end-state.

This is not to say that soldiers cannot adapt and extemporize. The value of individual and small unit ingenuity to find pathways of transformation is priceless. However, soldiers base their acceptance of privation and risk upon trust. They must trust that what they are about to do has some constructive value or purpose. The early veterans of the AIBs took rudimentary doctrine and equipment at face value and steadfastly learned how to use it, based upon the assumption that more knowledgeable leaders had validated what they were doing. Again and again, these men found that their efforts were undercut by organizational changes, equipment swap-outs and massive personnel fluctuations, (usually immediately following a field "validation" of their previous organization). If the Army is conducting an experiment with troops and units, say it's an experiment, and the troops will pitch in with confidence and esprit. Lack of such



forthrightness will erode unit effectiveness and sap soldier confidence in their skills, and their leaders.

The modern Army has established coherent programs of new equipment training (NET), but these are often truncated by the pressures of time or funding availability. NET cannot be under-subscribed less soldiers lose (or never gain), confidence in their weapons and equipment. Adequate time must be allocated for operators and leaders to become familiar and confident in new equipment before it's use in the field-either a training field, or the field of battle. Training resources must be distributed and synchronized adequately in both fielded forces and the institutional army (training base) to provide competence and confidence at the soldier level.

## DOCTRINE

The doctrinal development process of the 1940's Army was made of paper, and steel, and dirt. The tools of experimentation and modeling were flesh, blood and brainpower. The men of the AIBs developed their own doctrine, written in their own blood. As the Army of the 21st Century transforms, the immense power of available time and modern simulations will assist to develop tentative operational doctrine to support transforming units. However, the understanding of rapidly emerging doctrine, and the ability to accept, adopt and internalize transformation doctrine in practice down to the squad and soldier levels still operates at the pace of human cognitive skills. Human beings still generally learn about as fast in 2001 as they did in 1941. Intellectual discussion of the esoterics of doctrinal theory works well in service think tanks and around staff college seminar tables. The leaders and soldiers who implement our doctrine have to believe that it's right, and they have to have a common understanding of it. Clear, articulated and coherently institutionalized doctrine is the foundation upon which even squad leaders build their victories.

## TRAINING AND UNIT MOVES

The synchronization of individual, crew, and unit training for force as it transforms is a delicate balance of time, men and kit. The entire life cycle of the unit, if known, has to be considered before a holistic approach to unit training and transformation can be attempted. The men of the AIBs didn't have this luxury. The 21st Century transformation process has to have sound training management synchronized seamlessly with force development and change.

## MANNING

This study is not going to attempt to analyze current U.S. Army replacement operations. Combat losses will occur, perhaps not on the scale of the AIBs, but losses will have to be made good by our replacement system. A corollary of the AIB experience is however, possible in peacetime. Soldiers will be assigned to units that are already transforming. As with the AIB combat replacements, they'll be joining something new and foreign to their experience, and both they and their new comrades will face uncertainty as soldiers try to "catch up" to the needs of the outfit. Indoctrination programs are crucial to ensure the smooth integration of new soldiers into existing units without disruption of effectiveness or esprit and cohesion. This is not a sponsorship program—it is a regimen of technical "jumpstarting" designed to reduce the potential for short term deterioration in unit and soldier skills and confidence.

## LEADING:

The AIBs integrated the complicating factors of combined arms at platoon level, in the form of tanks, infantry, a machine gun squad and a mortar squad. This required leaders who could fight, coordinate, synchronize and *survive* simultaneously. The training base of the army was inadequate to the needs of these men and their units, and the results were too-often fatal, both to their leaders and to their men. Technical expertise often carried an officer through his initial days, but the tactical shortcomings of training were glaring.

As doctrine and equipment are fielded for transforming forces, the educational and leadership needs of the lieutenants and sergeants of the force must be at the forefront. Close synchronization has to be maintained between the curriculums of NCO schools, pre-commissioning, officer basic, and captain career courses with doctrinal and equipment

evolutions due to transformation This will become more difficult as the complicating factors of 21st Century technology make the tendency for over-specialization great. The reach of information technology will probably consolidate more decision-making at the battalion level and higher. However, the soldier on the ground in the center of battle has to be absolutely certain that his squad leaders, platoon leaders and company commanders know their business. What goes on at battalion and brigade level will probably be as immaterial to the 21st Century soldiers as it was to his World War II forebear.

The rationale for dramatic changes in the AIBs, indeed, their very formation from the regimental structure, provides an interesting final insight. Multiple official sources and scholarly works agree with confidence and documentation that the "heavy" tank division transformed into the "light" one of 1943 due to Army-wide manpower needs and lessons derived from the British and Germans.<sup>67</sup> However, every veteran interviewed for this study emphatically stated that these changes were due to the outcome of American experiences in the North African Campaign, and in particular to the dismal performance of the 1st Armored Division at the Battle of Kasserine Pass.<sup>68</sup> These men were, and remain convinced that their leaders from flag officers to squad leaders were directing and executing change in order to avoid repeating the mistakes of Kasserine Pass. Unit leadership within the armored divisions seized upon the anecdotal evidence of an American battle as the catalyst for change. For the modern Army, the rationale for change must be articulated to, and understood and accepted by the participants down to the individual soldier. Transformation must have a purpose, and that purpose has to be understood and internalized by the soldiers who fight and die in our nations wars.

## **PART 6. CONCLUSIONS**

The transformation of the United States Army of the 21st Century is enabled by technology, but it cannot be techno-centric. The human imperatives in force transformation must be at the forefront of our approach. We must heed the lessons learned by those soldiers who have done all of this before, in the Armored Infantry Battalions of World War II and elsewhere. The transformation of the Armored Infantry in World War II can be typified as a confusing maelstrom of soldiers and personnel arriving and departing to and from units, training being executed immediately prior to structural reorganization and the fielding of new equipment immediately prior to, or even during, its use in combat. It is a tribute to the flexibility, endurance and dedication of the American soldier that all of this somehow worked, and America won.

Man is the center of Army transformation. America's soldiers must know why they are changing, how they are changing, and that these changes are good for them and good for our nation. The soldier and his junior leader still stand at the center of the Army's ability to fight and win its nations wars-and to do anything else our nation requires of it.

Word Count: 6,905



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## GLOSSARY

AIB: Armored Infantry Battalion

AT: Anti-Tank. Describes a variety of weapons designed to defeat armored vehicles.

BAR: Browning Automatic Rifle. a .30 cal automatic rifle equipped with a 20 round magazine.

BAZOOKA: 2.36" anti-tank rocket launcher. Described variously by the users as "wonderful", and "suicide".

CCA: Combat Command "A". Armored division subordinate headquarters (usually) led by a Brigadier General. A flexible organization, usually consisting of 1-2 tank battalions, 1-2 AIBs, an armored artillery battalion, engineers and support troops.

CCB: Combat Command "B" The second of two formal combat commands in an armored division.

CCR: Combat Command "Reserve" Headquarters used in most armored divisions to provide administrative control of non-combat units of a division. Occasionally used as a tactical headquarters in most divisions, based upon METT-T. Permanently organized as a subordinate fighting headquarters in the 5th Armored Division.

HHC: Headquarters and Headquarters Company

HMG: Heavy Machine Gun. Could be .30 caliber, (water cooled), or .50 caliber machine gun. Weight of gun, mount and ammunition required a gun crew of 2-4 men.

LMG: Light Machine Gun. .30 caliber, air-cooled machine gun. Could be operated by one man, if necessary.

METT-T: Mission, Enemy, Terrain, Troops and Time available. The operational dynamics of organizing for combat operations.

NET: New Equipment Training. The process by which the users of new equipment learn it's operation, functions and capabilities. There are two major forms of NET: direct user, (everyone learns), and Train the Trainer, (leaders and specialized instructors learn, and then perform direct user training themselves).

T/O: Table of Organization and Equipment—amount and types of soldiers and combat gear authorized in a unit.

TTP: Tactics, Techniques and Procedures. Localized lessons learned and applied by units regarding the "how to" portions of combat.





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