



1 December 1986

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The United States Army Wartime Replacement System: Can It Maintain

Cohesion in Our Tactical Units?

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Accepted this 11th day of December 1936.

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(913) 684-2138

SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED

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19. .ABSTRACT (continued from other side of form)

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Keywords j combat efficiency j

combat forces j combat, support j combat effectiveness j

Replacement.

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ABSTRACT

THE UNITED STATES ARMY WARTIME REPLACEMENT SYSTEM: CAN IT MAINTAIN COHESION IN OUR TACTICAL UNITS? by Major William S. Knightly, USA, 39 pages.

One of the most fundamental elements in developing combat power in tactical units is cohesion. In wartime, most armies have sought to enhance unit cohesion in order to increase their combat power. Historically armies have found that their wartime replacement system is the critical link between raw manpower and cohesive fighting units.

This monograph describes the challenge faced by modern armies which must attempt to maintain tactical unit cohesion in the face of relentless combat attrition. The historical examples of the American and German Armies in World War II are examined to determine what effects their respective replacement systems had on unit cohesion. The current U.S. Army wartime replacement system is examined to determine if it is structured to maintain tactical unit cohesion in wartime.

The conclusions of this monograph suggest that the U.S. Army replacement system has not in the past and cannot in the future maintain unit cohesion in wartime. Five specific conclusions suggest ways in which the army might improve its wartime replacement system, enabling it to foster unit cohesion at the tactical level.

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I. Introduction

The maintenance of cohesion in tactical units is recognized as a key element in producing combat power on the battlefield. "Unit cohesion -- a unit's ability to stay together and fight effectively against heavy opposition -- is a prerequisite for success in combat." In his classic study of war, Battle Studies, the 19th century French military writer Ardant du Picq offered some relevant advice: "A wise organization insures that personnel of combat groups change as little as possible, so that comrades in peace time maneuvers shall be comrades in war." 2

The United States Army has taken laudable steps over the last few years to promote unit cohesion at the tactical level. The introduction of the COHORT training program and the Army Regimental System (New Manning System) are good examples of the recognition by the Army leadership that unit cohesion is, in fact, a vital element in producing confidence, esprit de corps, and the will to fight in tactical units. The current Army Chief of Staff, General John Wickham, has been one of the most vocal supporters of improving tactical unit cohesion:

The Cohesion, Operational Readiness and Training system (COHORT), which stabilizes soldiers and leaders in companies and battalions will allow horizontal and vertical bonding from initial entry training through deployment to combat. Within this more stable environment, cohesion, the powerful intangible combat multipilier will provide tightknit self confident units.

The real challenge, however, of maintaining unit cohesion inevitably will occur during war. It is this challenge that the Army appears unprepared to meet. Peacetime initiatives directed at maintaining unit cohesion, such as COHORT and the Army Regimental System, most likely will have only limited application during wartime, hence may not be effective. During mobilization and war, the extraordinary demands placed on the personnel system likely will preclude the Army from maintaining strict regimental affiliation. Historically armies have struggled with the problems of maintaining combat effectiveness during times of war. As one author has noted:

... of all the organizational problems an army has to solve, that of how to best merge replacements into existing units so as to insure cohesion of the whole is one of the most crucial.

The often neglected, bureaucracy-prone replacement system therefore emerges as one of the most important factors directly contributing to an army's combat power and overall effectiveness during wartime.

Given the importance of the replacement system in generating combat power, certain questions arise regarding the U.S. Army's replacement doctrine, both past and present. Is current Army doctrine designed to insure that unit cohesion is maintained during wartime? Has the Army leadership recognized the importance of the replacement

Army's replacement system worked in past wars? Was it successful in maintaining cohesion at the tactical level? If the Army's current replacement system does not foster cohesion, are there specific, identifiable changes that can be effected to improve wartime replacement doctrine? This monograph will seek to answer these questions.

Why is the operation of the seemingly unimportant administrative replacement system of such significance to the Army? What makes these questions any more important to an army than the problems of command and control, equipment modernization, or logistical sustainment? Perhaps a brief illustration from the Korean War will answer the question.

In November of 1950, General Douglas MacArthur visited the just-captured city of Pyongyang, the capital of North Korea. The U.S. Army honor guard which formed at the airport to meet him consisted of F Troop, 5th Cavalry Regiment. MacArthur ordered the troop commander to have those soldiers step forward who three months previously had come to Korea with the almost 200 man-strong company. Only five men stepped forward. These five men represented only 2.5% of the original unit. The troop had lost over ninety-seven percent of its original strength in just three months of combat. The dilemma for the Army was then, and continues to be now, how to maintain cohesion in tactical units which are subject to the unrelenting devastation and

attrition of modern warfare. The example of the 5th Cavalry is not unrepresentative of casualties in modern war. The experience of the German and American Armies in World War II was much the same.

The losses of a single (German) infantry company amounted in the first three years of the campaign in Russia to 1500 dead and wounded. This means, in the case of a company inventory of about 100 men in the line farthest forward, a life expectancy of an average of two and one half months for the individual infantryman.

American losses were equally devastating during World War II. According to historian Russell Weigley, an American infantry regiment lost on average, a hundred percent of its personnel in casualties in three months' combat during World War II. Referring to the "appalling hazard of an infantryman's life in combat", General Omar Bradley stated that in just fifteen days of combat, the 30th Division suffered in excess of ninety percent casualties in its rifle platoons.

It is not unrealistic to expect that attrition on the future battlefield will be equally devastating to the cohesion of tactical combat units. This fact clearly underscores the critical importance of the replacement system as a major element in building unit cohesion before and after the war starts.

How does the replacement system meet the challenge of modern conventional warfare? Is it just a matter of efficiently supplying numbers of individuals to the tactical units equal to the number of casualties sustained, or are there other intangible factors?

Former Army Deputy Chief of Staff for Personnel, General Maxwell Thurman, specifically has cited the need for the replacement system to foster unit stability and cohesion. These qualities, according to Thurman, will become even more critical to combat effectiveness as the Army moves toward <u>AirLand Battle 2000</u> doctrine which stresses independent action by battalions and brigades, initiative by low level leaders, and cohesion under the chaos and pressure of the battlefield. 10

In order to answer the questions posed above and to examine the effects of replacement systems on unit cohesion, two historical examples of large modern armies at war will be studied. The structure and performance of the German and American Army replacement systems in World War II will be compared. Both systems had costs and benefits. The focus of this paper will be to determine what effect their respective replacement systems had on combat power and cohesion at the tactical level.

The current replacement doctrine of the U.S. Army will also be examined to determine if it is structured to foster unit cohesion during wartime.

Finally, conclusions will be drawn based on the implications that the historical and contemporary evidence provide. These conclusions will attempt to provide answers to the questions posed in the preceding paragraphs.

Ardant du Picq crystallized the problem of unit cohesion in his 19th century writings, and his comments are still relevant today:

Soldiers, no matter how well drilled, who are assembled haphazard...will never have...that entire unity which is born of mutual acquaintanceship....There is no army at all without organization, and all organization is defective which neglects any means to strengthen the unity of combatants.

It is the ultimate challenge of an army's wartime replacement system to foster the unity described by du Picq. The replacement system therefore must bring forward highly trained, cohesive units capable of fighting effectively on the battlefield. Is this a challenge that the U.S. Army has prepared to meet or one which it has neglected?

II. The German Experience in World War II

The German Wehrmacht of World War II provides a good example of large scale replacement operations in modern warfare. The excellent organization and professional reputation of the German Army make it an ideal subject for study. "The German Army...was a superb fighting organization. In point of morale, elan, unit cohesion and

resilience it probably had no equal among twentieth century armies. $^{"12}$

Throughout most of World War II German soldiers were known for their combat spirit, tactical cohesiveness, and self-confidence. 13 How did the German Army achieve this high level of combat spirit and cohesiveness? There are probably many reasons. Certainly good leadership and excellent training were major factors. The operational skill of the German commanders was also a major element leading to overall German effectiveness. This factor, however, probably affected combat spirit and cohesion in indirect ways only. A more likely explanation for the fighting spirit and cohesion found at the tactical levels of the Wehrmacht was the replacement system. This system, although strained toward the latter stages of the war, remained relatively consistent in its ability to produce and maintain effective fighting units.

Although distinctly outnumbered and in a strategic sense quantitatively inferior in equipment, the German Army, on all fronts, maintained a high degree of organizational integrity and fighting effectiveness through a series of almost unbroken retreats over a period of several years.

During the war, the Germans maintained two distinct armies, the Field Army (<u>Feldheer</u>), which engaged in combat operations, and the Replacement Army (<u>Ersatzheer</u>), which recruited and trained the manpower for the Field Army. This

organization relieved the Field Army of basic training responsibilities. In addition to training recruits, the Replacement Army also trained officer candidates, non-commissioned officers (NCOs), and specialists for the Field Army. 15

The recruiting and replacement system was based on regional association. Germany was divided into geographical districts called Wehrkreise. Each Wehrkreis was responsible for recruiting and training soldiers to sustain a complete tactical army corps. Likewise each army division had a replacement regiment in its home Wehrkreis which supported only that division. ¹⁶ Cohesion started immediately by geographic and regimental association. There were, of course, exceptions to this rule for certain technical specialties. Some armored units were recruited nationally, basing their cohesion on elitism rather than geographic association. The principles of replacement, however, were much the same even for the elite units.

The German system encouraged frequent contact between the replacement unit commanders and the tactical unit commanders whom they supported. Although the German replacement system had a chain of command distinct from the combat structure, training accountability was enhanced because each producer supported one user who could and did provide specific feedback. 17 This close communication between the Replacement Army and the Field Army was a

definite strong point of the system. "Officers of the training unit and its parent division were expected to know each other personally and to exchange frequent visits and correspondence."18

Replacements, once trained by the Replacement Army, never traveled to their units as individuals. Soldiers were put together in 1,000 man marching battalions called Marschbattaillone. These formations were armed and equipped for combat. More importantly, they were commanded by officers and NCOs from the parent unit sent specifically to bring them forward. "New soldiers traveled with the men with whom they had trained and they were supervised by those who had a direct interest in both their proficiency and their morale throughout their movement." 19

Once the marching battalions arrived at their divisions, they were dissolved. The soldiers were then assigned to the division's replacement battalion (Feldersatzbattaillon) for further training in accordance with division standards. Typically, the division replacement battalion had three companies, each associated with one of the three regiments of the division. The NCOs and officers of these companies came from the supported regiments, thus they had a genuine interest in building a cohesive, combat effective team. Many German commanders assigned NCOs to the replacement companies as a reward for outstanding duty performance or in order to grant them a

rest from combat action. This, in turn, provided experienced combat veterans to train the replacements. 20

New soldiers were normally kept in the division replacement battalion for approximately four weeks. The divisional replacement battalions could be committed to combat action if the need arose.

...although divisional replacement battalions were occasionally committed to action, the infrequency with which this was done indicated the strong emphasis that German tactical commanders placed on adequate training and socialization.

Keeping new replacements in the replacement battalion this long had a cost. It denied depleted units immediate reinforcement. The German commanders, however, appeared to feel that sending trained soldiers forward to their combat units outweighed the apparent advantage of immediate numerical replacement.

...it was felt that a unit lost cohesiveness and combat effectiveness in inverse proportion to the number of replacements provided. Indeed their experience seemed to indicate to the Germans that a cohesive, tried unit at 70 percent strength had more combat power than the same unit brought to full strength with men unintegrated into its secondary and primary groups.

German replacements did not move to their units as individuals but as members of a group with identified leadership. Likewise, they did not join their units as

individuals but as members of a cohesive team. In the divisional replacement battalion group integrity was maintained.

After a period of training in the field replacement battalion the replacements would reach the front already knowing both each other and their commanders and forming a well-integrated team.

Other facets of the replacement system contributed to the maintenance of unit cohesion. For instance, unit commanders could not automatically request replacements as soon as they incurred losses. German combat units were not authorized to request replacements until they had vacancies totalling at least ten percent of authorized war establishment. 24 This reinforced the idea that combat effectiveness was more a function of command organization and cohesion than of numbers. This point is supported by General Hermann Balck, one of the most successful German Army commanders of World War II: "It is less a question of the number of people available and more one of having a reasonable organization."25 It is therefore not surprising that the German Army tactical formations consistently fought effectively even though well below their authorized strengths.

The army replacement system made a significant contribution to German combat effectiveness. This system combined tactical doctrine and training to engender the

tremendous combat power that German tactical formations could muster even when severely attrited. 26 Fighting below strength in order to preserve group identity and cohesion sometimes exacted a price. Even if cohesion was preserved, the lack of numbers at the tactical level tended to have a negative effect on soldier morale. Writing specifically about Wehrmacht tactical cohesion, Shils and Janowitz have stated that such low unit strength generated such feelings of weakness that solidarity gains were cancelled. 27 Still, it was not uncommon for German companies and battalions to fight effectively at fifty percent strength. Ad hoc cross-leveling of personnel in combat units was not an accepted method of building up combat power because it was thought to weaken unit cohesion. Speaking on this subject, General Balck reflected a commonly held German opinion:

It's quite alright to occasionally let a regimental commander stand and fight somewhere with 50 men. The troops do more because of esprit de corps, because they sentimentalize their own regiment. If they get stuck in another regiment they didn't achieve anything...often the companies would be down to one leader and 11 men. That was better than introducing lots of strangers into the company.

So strong was the feeling within the Army regarding cross-leveling that even corps commanders and higher were forbidden to transfer men between divisions prior to 1943

unless they received specific permission from OKH, the German Army high command. $^{\mbox{\footnotesize 29}}$

Another factor that strengthened cohesion was the way in which the German Army handled its battle casualties. Battle casualties remained on the rolls of the parent unit for four weeks (later eight weeks). This encouraged treatment and rehabilitation forward. Commanders could not request replacements for these soldiers during this period and therefore took a personal interest in their recovery and return to duty. From the standpoint of cohesion, it also meant that returning convalescents rejoined their original units rather than units unfamiliar to them.

The goal of the German replacement system was to produce combat effectiveness. In order to do this, the Germans sometimes sacrificed efficiency. In all likelihood, they could have moved replacements, especially individuals, to the forward units faster than they moved units. They chose, however, to sacrifice mechanical efficiency in order to achieve cohesion and combat power.

It can be argued that their system was highly inefficient from the point of optimum manpower utilization...But by creating cohesive secondary groups in the tactical units, the German replacement system laid the foundation upon which German combat power was based.

Despite the cost, they made the deliberate decision to build a decentralized replacement system based on the

premise that combat power is first achieved by establishing and maintaining strong cohesive units possessed of high standards of training and group integrity. The German Army possessed an effective replacement system which only failed late in the war when circumstances made it impossible to apply. 32

Army historian Lieutenant Colonel David Glantz has attributed the German Army's ability to avoid defeat in Russia, in the winter of 1942/1943 to

...the flexibility and initiative of commanders at all levels, the high cohesion and morale of units, and a deeper understanding by Manstein of the nature of operations.

As this points out, the skill of the commanders was a primary reason for German combat effectiveness. The replacement system, however, was certainly the foundation upon which the "cohesion" and "morale" of the tactical units were based. The accomplishments of this system were remarkable considering the adversity that the Army experienced.

This was an army that managed to retain combat-effectiveness when fighting for a cause in which it had only ambivalent belief and when that cause was perceived by most to be hopelessly lost. By the end of the war it was only sustained by the high level of unit cohesion and by its effective personnel replacement system.

As a result of this system, the average German soldier consistently fought well throughout the war. He did so even when outnumbered and, in many cases, in desperate situations. He fought according to one historian because

...he felt himself a member of a well-integrated, well-led team whose structure, administration and functioning were perceived to be on the whole...equitable and just.

Perhaps the most succinctly worded explanation for the success of the German replacement system is contained in a recently published Army study on replacement systems.

The Germans never let the criteria of objective managerial efficiency obscure the fact that the end result of the replacement system was the production of sujective combat power.

III. The U.S. Army Replacement Experience in World War II

The U.S. Army Replacement system during World War II contrasted sharply with the German system. Instead of a system built around the social and psychological needs of the individual soldier, quite a different system developed.

Thrust into a global war, war planners focused on delivering large quantities of individual soldiers to the fighting fronts. Unit integrity and group cohesion were not primary considerations as they were in the German Army, nor was there any regional or geographic association inherent in the recruiting or replacement system. The establishment of

a human pipeline capable of rapidly replacing battle casualties was the goal of the World War II replacement system.

Managerial efficiency rather than combat power was perceived as the ultimate organizational goal. Charts depicted the replacement system as though it was an industrial assembly line process with flow valves, pipelines and holding tanks pouring or dripping first into other holding tanks, then into units.

Replacement planning for World War II was, at best, inadequate because planners did not seriously envision the United States fighting another major war in Europe. Once the war commenced, mobilization became the first priority of the war planners "...the mobilization effort actively hindered both sustainment operations and efforts to develop combat unit cohesion." 38 As a result, replacement operations were highly centralized, impersonal, and oriented primarily toward managerial efficiency. The underlying philosophy of the Army was that men, like equipment, were interchangeable parts of a vast fighting machine. 39 The resulting replacement system used by the Army during the war was inconsistent, impersonal, and quite often tragic in its consequences. Technical solutions were applied to the management of personnel fostering a neglect of the needs of the soldiers as individuals. There existed a strong belief in the virtues of quantification. Attempting to make possible a mechanized system of administration, anything and

everything was given a number. 40 Attempts were made throughout the war to apply this quantitative approach to the replacement system. The result was a system that valued administrative efficiency above combat effectiveness.

The route that the typical U.S. Army replacement traveled in order to reach his ultimate destinations was significantly different in design from that of his German counterpart. After finishing basic training, replacements were normally shipped from replacement centers in the United States to Theater Depots ("repple depples") overseas. Unlike his German counterpart, the American soldier traveled as an individual during the entire journey from basic training center to front line unit. The U.S. replacement was merely a commodity being moved through a long and winding pipeline.

...He was reprocessed and reassigned to a holding company at the port of embarkation and as shipping was available, he was alphabetically sorted and assigned as an individual to a shipment draft for the theater. He then traveled under whatever officer and non-commissioned officer supervision that bappened to be going the same way.

Once in the theater, the replacement was shuttled to a theater depot, then to a forward depot and finally to a division for final assignment. Unfortunately, the replacement's experience with the replacement depot was usually not a pleasant one:

...life in a "repple depple" was a constant battle against boredom, frustration and worry....left with nothing to do, and without knowledge as to his future assignment, the replacement pictured a bleak future for himself and expanded every rumor....training was often makeshift and pointless, and not always of a high calibre, for its conduct depended largely on officers who themselves were replacements or casuals who gave only grudging cooperation.

This journey throug the replacement system took, on average, from months. So bad was the experience of the soldiers in the replacement depots that a post-war study concluded:

In no other echelon of the Army was the spirit of the troops so low as that in the replacement stream in a zone of the Interior Overseas Replacement Depot...

The cruelest aspect of the replacement system arguably was the reception that the replacement received in the division and regimental areas. Special divisional organizations charged with receiving and absorbing replacements did not exist. 44 New arrivals were expected to "learn the ropes" from the unit veterans. Unfortunately the high casualty rates that claimed, on average, one hundred percent of an American regiment over a three month period left few veterans for this purpose. This lack of an organization to receive and train new soldiers often resulted in inexcusable deficiencies in training and readiness. For example, a replacement depot in the European

theater issued the model 1903 rifle to arriving replacements. However, upon reporting to their new units, the soldiers were rearmed with the M-1 rifle.

The resultant blow to combat efficiency was obvious. Replacement riflemen had to zero their new weapons on Germans without the benefits of previous target practice with the new rifles.

This lack of a system to train and integrate new soldiers was one of the most tragic legacies of the replacement system. Commenting on this inexcusable shortcoming and its effect on soldiers, General of the Army Omar Bradley stated: "Many went into the lines at night and perished before morning. Some were evacuated as wounded even before they learned the names of their sargeants." 46

Since soldiers traveled alone and not as members of a unit, it is not surprising that the morale and enthusiasm of newly arrived soldiers was severely strained:

Replacements arrived in divisional and regimental areas tired, bewildered and disheartened after having been shunted from one replacement depot to another, led by officers temporarily appointed for convoy or escort purposes who themselves were more or less bewildered.

The way in which arriving soldiers were received into their units added a feeling of isolation and loneliness to the anxiety they already felt about their entry into the

war. One soldier characterized what must have been the feelings of many of his contemporaries:

We want to feel that we are part of something. As a replacement we are apart from everything. You feel as if you are being pushed out of a place blindfolded. They treat us like idiots and we don't disappoint them...Being a replacement is just like being an orphan. You are away from anybody you know and feel lost and lonesome.

The experience of Private Morris Sussman is typical of that of combat unit replacements during the war. After traveling the human pipeline, Private Sussman was assigned to the 4th Infantry Division. Arriving in November of 1944, he was "welcomed" into the division:

A first sergeant, taking charge of Sussman and twenty-six other men scheduled to go to company E, led them to a group of dugouts, where they spent the night. Here Sussman learned for sure he was in E company and somebody said he was in the First Army. He had no idea what regiment or what division he belonged to.

Incredibly, Private Sussman was one of 4,924 replacements absorbed into the 4th Infantry Division during November 1944. This statistic alone provides a glimpse of the enormous challenge faced by the Army in maintaining unit cohesion. This challenge was only rendered more difficult by a system preoccupied with generating numbers rather than combat power. Replacements flowed into units such as the 4th Division at such a rapid pace that there was virtually

no time for them to be socialized into their primary fighting groups. Units composed of men not knowing their leaders or each other were routinely thrown into combat and expected to perform extraordinary missions.

S. L. A. Marshall, addressing a class of the Command and General Staff College, described the tragic results of sending men into combat this way:

Do you realize gentlemen that something like sixty percent of the people who were combat fatigue cases in World War II were replacements that came up and were destroyed their first day in battle? They broke because they knew nobody. Suddenly they were put into a terror-filled situation and there was no one at hand that they could deal with as a friend. I think this is one of the most important statistics in our post-war history. That we had been careless about human nature in handling our replacements.

On many occasions it was made apparent that groups of individuals lacking in any sort of cohesion could not perform effectively in combat. The case of the 112th Infantry Regiment of the 28th Division is a prime example. Attacking in November of 1944 to seize German positions near the town of Schmidt, the unit sustained heavy casualties. After the regiment was withdrawn to reorganize, the magnitude of its losses became apparent. A total of forty-six officers and 829 enlisted casualties were reported for the single day of 10 November. Battalions of the 112th Infantry were reduced to company size formations. 52 The

28th Division headquarters immediately ordered that the regiment be brought up to strength using the division's individual replacements. Even though this was quickly accomplished, the regiment was still unable to carry out an attack scheduled for 10 November. The commander of the 2nd Battalion scheduled to lead the attack reported to the division G-3 that the battalion:

...while up to strength, could not be considered more than 20 percent effective for combat; 515 replacements having been placed in the battalion the day previous.

In other words, numbers of individuals were not sufficient to replace a trained cohesive unit.

The problems of the 112th simply mirrored the problems of the 28th Division as a whole. The division entered the battle of Schmidt on 2 November with 13,932 effectives. On 13 November it listed 13,447 effectives. However, in the intervening eleven days it suffered 5,028 casualties, most of whom were replaced by individual replacements. The majority of these losses occurred in the infantry battalions, units in which group cohesion is critical. Considering that a 1944 infantry division had approximately 6,000 infantrymen, the effect on the 28th division's fighting strength was staggering.

The replacement system struggled to replace these losses as was prescribed by Army policy:

For the most part U.S. forces in the European theater attempted to keep units at their full TOE strength through the provision of individual replacements delivered to units either while they were in action or when they were out of the line and refitting.

Did the units gain anything more than raw numbers? In the case of the 28th Division the question is best answered in the conclusions reached in a recent Army historical study of the 28th Division at Schmidt:

The division was able to replace its heavy personnel losses, but the influx of replacements was so great that the individual regiments were no longer combat effective.

By 10 November 1944, just eight days after the battle of Schmidt had commenced, three out of every five soldiers were newly arrived replacements. These men had endured the human pipeline of the army replacement system only to be thrust into what was for many of them the most traumatic experience of their lives. By December 1944 even individual replacements had become scarce. The G2 of the 12th Army Group reported that his infantry shortages amounted to 17,000 riflemen among the thirty-one divisions on the line. This shortage resulted in "truckloads of hastily trained riflemen," being shipped forward as replacements. 57 With no divisional organization set up to receive these newly minted infantrymen, it is difficult to understand how any unit cohesion was instilled before the troops entered combat.

Soldiers unfortunate enough to be wounded were also potentially affected by the replacement system. Unlike the German system, wounded personnel were not kept on the unit rolls during their convalescence.

...wounded personnel requiring hospitalization were dropped from the roles following evacuation. Emerging from the hospitals they entered the replacement system which threated [sic.] them like everybody else.

This was done in order to prevent units from becoming "overstrength." Returning convalescents had to be socialized into new units just as though they were replacements. Once a man was wounded he lost his unit identity. The effect on morale can easily be imagined. A postwar investigating board came to a conclusion that reflects a common sense that was apparently lacking during the war:

It must be standard operating procedure that patients discharged from hospitals be returned to their own units provided the individual is qualified for duty therewith, even though those units be overstrength.

There were some attempts made late in the war to change what had been recognized as an unsatisfactory system.

General Joseph W. Stilwell, who became Commanding General of the Army Ground Forces in February 1945, proposed specific changes in the replacement system deigned to build unit cohesion and improve morale. Stilwell proposed identifying

designed as training sources for particular divisions.

Within these units individuals were to be grouped into squads and platoons, with which they were to remain throughout their training and while being moved to the scene of combat. Stilwell even considered returning officers from their respective divisions to the United States for the purpose of escorting the new soldiers forward. The theater commanders when consulted about the plan agreed that it would have a good effect but were reluctant to make any changes to the replacement system so late in the war. Stilwell abandoned the idea.

Replacements continued to be trained and assigned as individuals, and were formed into temporary companies during the process of shipment only for disciplinary effect and administrative conveniences.

The U.S. Army replacement system was a primary factor in the combat ineffectiveness of many Army units during the war. Perhaps the most stinging indictment of the replacement system has been rendered by historian Nartin Van Creveld:

[The U.S. Army]...put technical and administrative efficiency at the head of its list in priorities, disregarded other considerations and produced a system that possessed a strong inherent tendency to turn men into nervous wrecks. Perhaps more than any other single factor, it was this system which

was responsible for the weaknesses displayed by the U.S. Army during World War II.

The conclusions of the Army Replacement Board (1947) underscore the importance of a replacement system during war:

A smooth working adequate replacement system is of the highest importance to the successful prosecution of war. Its lack at the start of World War II had a direct bearing upon combat operations, led to battle casualties...and may have prolonged the war.

The replacement soldier of World War II found himself in a crowded, unfriendly, impersonal system that paid almost no attention to his psychological needs. This dismal system was certainly one of the primary causes of the lack of cohesion demonstrated by Army tactical units during the war.

IV. Current Army Replacements Doctrine

The current replacement doctrine of the U.S. Army, as reflected in official doctrinal publications, reveals a replacement policy not significantly different from the Army's policy of World War II. The emphasis appears to be squarely on efficiency.

FM 12-16 Replacement Operations, and TRADOC PAM 525-25, U.S. Army Concept for Wartime Personnel Replacement

Operations, provide doctrinal guidance for the conduct of replacement operations in the Army. These publications are, in effect, blueprints for the design and operation of the

replacement system. The essence of these publications is quickly grasped by noting that the words "cohesion," "unit integrity," and "combat effectiveness" appear nowhere in these manuals. The current doctrine describes an administrative people-moving system which focuses exclusively on the mechanics of making the system function efficiently. Efficiency rather than combat power seems to be the goal of the system. FM 12-16 Replacement Operations states:

Many wartime scenarios indicate that the army will be at a great personnel disadvantage. Therefore the replacement system must operate at maximum efficiency.

As we have seen with the German experience, combat power and tactical unit cohesion are not always produced by the most efficient system.

The (German) system focused on the maintenance of unit cohesion and combat power rather than on the maintenance of unit strength and it did so to the detriment of optimum managerial efficiency.

Although FM 12-16 does address the desirability and value of replacement crews, teams and units, the current Army replacement system is still referred to as "...the traditional individual replacement system." The treatment given to replacement crews and units seems to indicate that the real value of such units are not their inherent

commander in parceling out replacements:

Replacement units are more valuable to the theater commanders than individual replacements; the units provide maximum flexibility. They can be used as a complete unit or drawn down as the commander desires.

Presumably "drawn down" is a euphemism for "broken up into individual replacements." This may be a necessary option for a commander, but our doctrine should establish a clear priority for maintaining unit integrity.

There are those within the U.S. military community who think that an individual replacement system is desirable.

Retired Major General David Gray is one such individual.

Writing in Army magazine, General Gray stated his case:

The operational capability of a unit depends primarily on how well each individual knows his job, and just as importantly, is able to take on the jobs of others. We have all seen instances where ad hoc groups of well-trained people have been assembled for a specific purpose and in a matter of hours have been able to function effectively.

This might well be the case for peacetime tasks, but historical evidence suggests that ad hoc grouping of men for combat tasks often proves disastrous. Citing just one example of the inherent weaknesses of such arrangements, historian Martin Van Creveld has described the case of German soldiers on leave randomly organized into ad hoc

groups "...improvised units consisting of men picked out of leave-trains and hurriedly thrown together in a crisis proved to be almost without fighting power." 70

Still, General Gray feels that individual replacement has advantages over unit replacement. He does not indicate what effect such a system would have on cohesion and unit integrity during wartime.

Unfortunately there appears to be nothing in current Army doctrine that would prevent the Army in wartime from repeating the most disastrous replacement mistakes from World War II.

Charts and wiring diagrams, not unlike the "valves" and "holding tanks" of the World War II system, describe the route of future replacements. Doctrinally, replacements move from CONUS replacement centers (CRC) into the Theater Army Replacement System (TARS). Here replacements move through the Personnel Replacement Battalion (Theater), Replacement Regulating Detachment (Corps), and ultimately to the Divisional replacement detachment. There is, however, no mention of a comprehensive method to move soldiers through the system so as to avoid the negative impersonal effects on morale so prevalent in World War II. In fact, FM 12-16 refers to soldiers moving through the system to their units as: "...the inventory of replacements moving through its replacement channels." This is strikingly reminiscent of the "people as parts attitude" of World War II. What

sort of chain of command will be provided during movement?
Will the same leaders accompany replacements through the entire system? These questions are not addressed in the current doctrine.

How long will replacements remain in the replacement system? Although not specifically addressed, there does seem to be consideration given to moving replacements rapidly through the system to their final destination: "Personnel will be moved directly to the lowest level of tactical assignment consistent with the tactical situation." 72

Reception and integration into the unit still appear to be a potentially serious problem. At the tactical level, the division replacement detachment (RD) is the lowest level element designated to receive replacements. The RD is an organic part of the division AG company and has essentially an administrative processing function. It is not, however, the type of unit organized or manned for proper integration and combat training of replacements. FM 12-16 describes the function of the divisional replacement detachment:

The RD receives, controls and billets individual and crew/team replacements while they await inprocessing or outprocessing or transportation to their assignments. In the meantime, RD personnel familiarize replacements with the division's mission and tactical situation.

The RD has no clearly defined training nor integration mission other than to "familiarize" replacements. The RD normally contains three replacement teams. Each team has a small cadre of only one platoon leader and one platoon sergeant. Their duties are extremely limited: "They ensure that the replacements are used properly during their brief assignment to the detachment." The phrase "used properly" is not further defined. The division RDs do not appear to be suited to the type of reception/integration that is required for replacement soldiers during wartime. The Army Replacement Board (1947) came to a very definite conclusion regarding this problem:

In any future war, means must be perfected whereby replacements are not committed to close combat without the opportunity of being integrated into their units while it is out of action or without receiving other careful not introduction to combat training.

Clearly a more comprehensive organization than the current division RD is needed for this purpose.

Another problem in our current doctrine is the recurring fixation with strength accounting. The tendency in the Army to judge a unit's combat effectiveness by its numerical strength is still evident in current doctrine.

Generally, the minimum strength accounting data required to make tactical employment decisions and establish assignment priorities are gross (quantitative) numerical strength

figures for a unit....Strength accounting also determines personnel requirements and it influences personnel cross-leveling and on-hand replacement distribution decisions.

As the historical examples indicate, there are other factors that should be given at least equal treatment when determining replacement requirements.

The single greatest flaw in our current doctrine is the failure specifically to address the humar and psychological needs of the individual soldier. Administrative and technical aspects of the replacement system are the exclusive focus of the doctrinal publications. The critical factors of cohesion, unit integrity, and morale are simply not addressed in our wartime doctrine. This tendency to emphasize efficiency over combat effectiveness and to make no institutional provision for building cohesion in our tactical units is a legacy from World War II that still haunts our replacement system.

V. Conclusions

In Section I of this study the fundamental ability of the U.S. Army to maintain cohesion in its tactical units in wartime was questioned. The historical examples and current doctrine examined in the monograph suggest that our current replacement system will not be able to meet the wartime challenge of maintaining tactical unit cohesion.

Although the American World War II historical example presented in this study is limited in its scope, a pattern of unsatisfactory replacement operations has been characteristic of U.S. Army wartime operations. General Bruce Palmer, writing in The 25 Year War: America's Nilitary Role in Vietnam, has stated that the problem of wartime replacement is one that the U.S. Army has never solved:

The U.S. Army in its long history has yet to devise a wholly satisfactory way of maintaining the strength and integrity of combat units long exposed to the unrelenting hardship and dangers of prolonged combat.

Current Army doctrine bears this out. The Army once again appears oriented on efficiency rather than on combat effectiveness. The human elements and the emphasis on cohesion so evident in our peacetime programs (COHORT, Regimental system) have not been properly addressed in our wartime replacement operations.

If this broad conclusion is valid, are there then specific actions that can be taken to improve our system and make it more conducive to building cohesion?

The evidence examined in this study suggests that there are at least five factors or principles that would greatly assist the Army in building cohesion in its wartime replacement system.

First, it is imperative that Army planners recognize the importance of the replacement system to the success of the Army. Since this is a system that is not used in peacetime, it is easy to lose sight of the vital importance of the system to the very survival of the Army. The conclusions of the Army Replacement Board study (1947) clearly indicate just how important the system is:

There is no single peacetime planning program which is more important than to determine exactly how the (replacement) system should operate to support a future war.

Recognizing the importance of the replacement system is the first essential step in revitalizing the replacement structure.

Second, the Army must define the objective of the replacement system. One of the greatest shortcomings of the current system is the failure to identify exactly what constitutes success in a replacement system. Is it efficiency, combat effectiveness, or perhaps some other goal that constitutes success? FM 12-16 does not define success, it merely describes an administrative system. The Army must decide what objectives it wishes its replacement system to accomplish. This shortcoming has apparently lingered since World War II. The Army Replacement Board of 1947 referred to a study which disclosed a general lack of knowledge upon the part of tactical commanders as to the operational goals

and objectives of the Ground Forces Replacement System. 79

In any future conflict the ends and means of the replacement system must be clearly identified and understood by all leadership echelons of the Army. Exactly who should have responsibility for planning replacement operations (DCSPER/DCSOPS) is a subject for a separate study.

Third, the Army must recognize that unit strength (numbers) does not necessarily equate to combat effectiveness. During World War II the Army consistently tried to keep units at their authorized strength in the mistaken belief that numbers equated to combat power. The policy of constantly replacing casualties in order to keep up T/O strength undermined cohesion and prevented the consolidation of primary combat groups. 80 The Germans, as we have seen, deliberately fought below authorized strength to preserve cohesion and to integrate and train their new soldiers properly. S. L. A. Harshall observed that raw manpower simply does not add up to combat power:

When you have a group of individuals come up as fillers, to take over the gaps; if those men are not identified with one another, if they have not had time to feel their way around in the new organization it's better to leave them back and wait till they get a chance than it is to put these rifles in your line thinking that you're going to get strength out of it. You will get no additional strength.

Numbers, while obviously important, don't in themselves equal combat power. There are other important factors that must be considered:

...combat power is a subjective determination that is situational and relative and it depends on the elements of maneuver, firepower, protection, cohesion, and leadership....there is no direct or even necessary correlation between a unit's effective combat power and its effective personnel strength.

Although students of Clausewitz may dispute the specifics of this statement, it nonetheless makes the point that other factors may be at least as important as numbers.

Fourth, in any replacement system which the Army adopts, soldiers should never be allowed to move through the system as individuals. This inexcusable practice fostered during World War II quickly destroyed the confidence and morale of the soldier. Historically the needs of the individuals lost out to the cause of administrative efficiency: "...so often in the U.S. Army the psychological needs of the soldier were sacrificed to the administrative convenience of higher headquarters." Since AirLand Battle doctrine requires strong cohesive units it is imperative that soldiers are brought through the system with at least a small group of men whom they know. Once again S. L. A. Marshall has provided sound advice based on experience that may be extremely relevant for our current doctrine: "If we can't do anything else let's send them in packets of four

people who know one another...never, never again send men into line or send them overseas singly."84

The final specific conclusion drawn from this study is the need at the division level for an organization that would integrate and train replacements. Currently, the smallest tactical unit specifically staffed to receive replacements is the division. As we have seen in the German example, the divisional replacement battalion (Feldersatzbattalion) provides a successful model of such an organization. The current doctrinal divisional replacement detachment (RD) is not organized to perform this tactical function.

Such an organization would have as its main focus the mission to integrate new soldiers by providing them with a sense of belonging to the division. Unit traditions and history would be stressed. Specific tactical training related to the unit's mission would also be a major objective of this organization. The creation of such a unit would in all but the most extreme cases prevent the commitment of soldiers directly into combat as so often occurred in World War II. Giving new soldiers the time to properly assimilate is critical to cohesion and effectiveness.

Generally the steadiness and effectiveness of the replacement was in direct proportion to the amount of time

he had to integrate himself into his unit before going into combat.

Such an organization should be organized and operated in peacetime in order to make it effective in wartime. This is one of the factors that made the German system so effective:

The effectiveness of the German replacement system during the Second World War was no accident because it was directly based on the peacetime replacement system that had sustained the army during the interwar period...86

In summarizing the conclusions of this study, it is important to recognize what is possible and what is not. Certainly it is not unrealistic to expect some fundamental changes in the Army's wartime replacement policy. The conclusions listed above, however, do not necessarily mean that the entire structure of the system must change drastically. There is, to be sure, a need to change fundamentally the way in which we view the soldier's needs, and the way in which we define personnel replacement effectiveness. This aside, however, the actual physical structuring of stateside and overseas replacement depots need not change. Only the way in which we organize and move soldiers through the system requires modifications. creation of an organization at the division level is probably the major exception. But even this need does not call for sweeping changes. Divisions already possess

replacement organizations that could be restructured to meet more effectively the potential combat needs of the unit and the individual.

The legacy of the individual replacement system is not a happy one. At the conclusion of each war the urgency to change the replacement system seems to wind down like the system itself. A sense of history and responsibility, however, demands that the Army find a way institutionally to ensure that the product of the replacement system will be cohesive units rather than confused individuals. As S. L. A. Marshall so simply stated: "...if you send a man into combat by himself as a replacement, you have destroyed him." In the process we might also destroy the Army.

Endnotes

- 1. Peter Kindsvatter, "Individual Replacement: There Must Be a Better Way," Army, (May 1980), p. 37.
- 2. Ardant du Picq, <u>Battle Studies</u>, (Harrisburg, PA: 1946), p. 96.
- 3. General John Wickham, "Light Infantry Divisions," White Paper, (Washington, DC: 1984), p. 3.
- 4. TRADOC PAM 525-25, <u>U.S. Army Concept for Wartime</u>
 Personnel Replacement, (Washington, DC: 1983), p. 4.
- 5. K. Lang, Military Institutions and the Sociology of War, (London: 1972). This reference is quoted on page 87 of Fighting Power: German Military Performance 1914-1945, by Martin Van Creveld, (Carlisle Barracks, PA: 1983).
- 6. Roy Appleman, <u>United States Army in the Korean War:</u>
 South to the Naktong, North to the Yalu, (Washington, DC: 1961), p. 653.
- 7. Franz Uhle-Wetter, <u>Battlefield Central Europe</u>, (Translation published 1985), p. 17.
- 8. Russell Weigley, <u>History of the United States Army</u>, (New York, NY: 1967), p. 438.
- 9. Omar N. Bradley, A Soldiers Story, (New York, NY: 1951), pp. 445-446.
- 10. Lieutenant General Maxwell Thurman, "The New Manning System Aims at Stability," <u>Army</u>, (February 1983), p. 20.
- 11. du Picq, p. 110.
- 12. Martin Van Creveld, <u>Fighting Power: German Military</u>
 <u>Performance, 1914-1945</u>, (Carlisle Barracks, PA: 1983),
 p. 187.
- 13. F. W. Von Mellenthin, et. al., NATO Under Attack; Why the Western Alliance Can Fight Outnumbered and Win in Central Europe Without Nuclear Weapons, (Durham, NC: 1984), p. 39.

- 14. Edward Shils and Morris Janowitz, "Cohesion and Disintegration in the Wehrmacht in World War II," Public Opinion Quarterly, (Summer 1948), p. 280.
- 15. Peter Kozumplik, <u>Comparative Wartime Replacement</u>

 <u>Systems (DRAFT)</u>, (Washington, DC: 1986), Chapter 12, pp. 9-13.
- 16. Van Creveld, p. 88.
- 17. Kozumplik, pp. 9-10.
- 18. Van Creveld, p. 83.
- 19. Kozumplik, Chapter 12, p. 13.
- 20. Kozumplik, Chapter 12, pp. 9-20.
- 21. Kozumplik, Chapter 12, p. 14.
- 22. Kozumplik, Chapter 12, p. 15
- 23. Van Creveld, p. 88.
- 24. Kozumplik, Chapter 12, p. 8.
- 25. General Hermann Balck, <u>Translations of Taped</u>
 <u>Conversations</u>, Tactical Technology Center, (Columbus, OH: 1979), p. 18.
- 26. Kozumplik, Chapter 12, p. 22.
- 27. Shils and Janowitz, p. 287 (Footnote 13).
- 28. Balck, p. 19.
- 29. Kozumplik, Chapter 12, p. 16.
- 30. Kozumplik, Chapter 12, p. 8.
- 31. Kozumplik, Chapter 12, p. 22.
- 32. Van Creveld, p. 93.
- 33. 1984 Art of War Symposium; From the DON to the DNEPR: Soviet Offensive Operations, December 1942 August 1943, (Carlisle Barracks, PA: U.S. Army War College, 1984), p. 412.
- 34. Kozumplik, Chapter 12, p. 1.

- 35. Van Creveld, p. 187.
- 36. Kozumplik, Chapter 12, p. 22.
- 37. Kozumplik, Chapter 4, p. 3.
- 38. Kozumplik, Chapter 4, p. 8.
- 39. Hajor Thomas J. Strass, The United States Army Replacement System: A Framework for Wartime Personnel Replacement, MMAS Thesis, (Fort Leavenworth, KS: 1984), p. 34.
- 40. Van Creveld, p. 72.
- 41. Kozumplik, Chapter 4, p. 14.
- 42. Roland Ruppenthal, Logistical Support of the Armies, (Washington, DC: 1959), p. 340.
- 43. "U.S. Army Replacement System Worldwide, World War II," Report of the Replacement Board, (Washington, DC: 1947), Book III, p. 59.
- 44. Van Creveld, p. 90.
- 45. Replacement Board (1947), Book I, p. 54.
- 46. Bradley, p. 446.
- 47. Van Creveld, pp. 90-91.
- 48. Samuel Stouffer, et. al., <u>Studies in Social Psychology in World War II</u>, Volume II, (Princeton, NJ: 1949), p. 273.
- 49. Charles B. MacDonald, The Battle of the Huertgen Forest, (New York, NY: 1963), p. 263.
- 50. MacDonald, pp. 263-264.
- 51. Roger J. Spiller, Editor, S. L. A. Marshall at Leavenworth, (Fort Leavenworth, KS: 1980), Lecture V, p. 27.
- 52. Edward Drew, <u>Unit Reconstitution A Historical</u>
 <u>Perspective</u>, (Fort Leavenworth, KS: 1983), p. 29.
- 53. Drew, p. 41.
- 54. Drew, p. 29.

- 55. Ruppenthal, p. 334.
- 56. Drew, p. 39.
- 57. Bradley, p. 444.
- 58. Van Creveld, p. 118.
- 59. Replacement Board (1947), Book I, p. 22.
- 60. Robert Palmer, et.al., <u>Procurement and Training of Ground Combat Troops</u>, (Washington, DC: 1948), pp. 230-231.
- 61. Palmer, et.al., pp. 230-231.
- 62. Palmer, et.al., p. 231.
- 63. Van Creveld, p. 93.
- 64. Replacement Board (1947), Book I, p. 10.
- 65. FM 12-16, Replacement Operations, (Washington, DC: 1984), p. 2-1.
- 66. Kozumplik, Chapter 12, p. 7.
- 67. FM 12-16, p. Preface.
- 68. FM 12-16. p. 1-2.
- 69. Major General (Retired) David Gray, "Is Unit Replacement Really the Way to Go?", Army, (June 1982), p. 57.
- 70. Van Creveld, p. 87 (Quoted from Shils and Janowitz, p. 288).
- 71. FM 12-16, p. 3-1.
- 72. TRADOC PAM 525-25, p. 3.
- 73. FM 12-16, p. 3-4.
- 74. FM 12-16. p. 3-5.
- 75. Replacement Board (1947), Book I, p. 21.
- 76. Student Handbook, Command and General Staff College, Echelons Above Corps: Combat Service Support, (Fort Leavenworth, KS: AY85/86), p. 5-1.

- 77. Bruce Palmer, The 25 Year War: America's Military Role in Vietnam, (Lexington, KY: 1984), p. 204.
- 78. Replacement Board (1947), Book I, p. 10.
- 79. Replacement Board (1947), Book III, p. 4.
- 80. Van Creveld, p. 54.
- 81. Spiller, Lecture V, p. 28.
- 32. Kozumplik, Chapter 1, p. 6.
- 83. Van Creveld, p. 118.
- 84. Spiller, Lecture V, p. 27.
- 85. Palmer, et.al., p. 230.
- 86. Kozumplik, Chapter 12, p. 2.
- 87. Spiller, Lecture V, p. 27.

Bibliography

Books

- Appleman, Roy E. <u>United States Army in the Korean War:</u>
 South to the Naktong, North to the Yalu, (Washington, DC: Office of the Chief of Military History), 1961.
- Bradley, Omar, General, USA. <u>A Soldier's Story</u>, (New York, NY: Holt), 1951.
- du Picq, Ardant. <u>Battle Studies</u>, (Harrisburg, PA: Military Service Publishing Company), 1946.
- Lang, K. Military Institutions and the Society of War, (London), 1972.
- MacDonald, Charles B. Three Battles: Arnaville, Altuzzo, and Schmidt, United States Army in World War II, (Washington, DC: Office of the Chief of Military History), 1952.
- (New York, NY: Modern Literary Editors Publishing Company), 1963.
- Palmer, Bruce, Jr., General. The 25 Year War, America's Military Role in Vietnam, (Lexington, KY: University of Kentucky Press), 1984.
- Palmer, Robert, et. al., <u>Procurement and Training of Ground Combat Troops</u>, (Washington, DC: Historical Division), 1948.
- Ruppenthal, Roland G. <u>Logistical Support of the Armies</u>, (Washington, DC: Office of the Chief of Military History, Volume II), 1959.
- Stouffer, Samuel A. <u>Studies in Social Psychology in World War II</u>, (Princeton, NJ: Princeton University Press), 1949.
- Uhe-Wetter, Franz. <u>Battlefield Central Europe</u>, (Translation: Unpublished), 1985.
- Van Creveld, Martin. <u>Fighting Power, German Military</u>
 <u>Performance, 1914-1945</u>, (Carlisle Barracks, PA: United
 States Army War College), November 1983.

Von Mellenthin, F. W., et. al. NATO Under Attack; Why the Western Alliance Can Fight Outnumbered and Win in Central Europe Without Nuclear Weapons, (Durham, NC: Duke University Press), 1984.

Articles and Periodicals

- Gray, David, General (Retired). "Is Unit Replacement Really the Way to Go?" Army, June 1982.
- Kindsvatter, Peter. "Individual Replacements: There Must Be a Better Way," Army, May 1980.
- Shils and Janowitz. "Cohesion and Disintegration in the Wehrmacht," <u>Public Opinion Quarterly XII</u>, Summer 1948.
- Wickham, John, General. "Light Infantry Divisions," White Paper, (Washington, DC), 1984.
- Staff Writer. "The New Manning System Aims at Stability," Army, February 1983.

Government Documents

- FM 12-16, Replacement Operations, July 1984.
- FM 63-2, Combat Service Support Operations Division, November 1983.
- Student Handbook, Command and General Staff College, <u>Echelons Above Corps: Combat Service Support</u>, (Fort Leavenworth, KS), Academic Year 85/86.
- TRADOC PAM 525-25, U.S. Army Concept for Wartime Personnel Replacement.
- I.S. Army Replacement System Worldwide, World War II, Report of the Replacement Board, Book I, (Washington, DC), 1947.
- U.S. Army Replacement System Worldwide, World War II, Report of the Replacement Board, Book III, (Washington, DC), 1947.

Theses, Studies, and Other Papers

Balck, Hermann, General. (<u>Translation of taped conversation</u>), Tactical Technology Center, (Columbus, Ofi: battelle-Columbus Laboratories), January and April 1979.

- Drew, Edward J. <u>Unit Reconstitution A Historical</u>
 <u>Perspective</u>, (Fort Leavenworth, KS: Combat Studies
 <u>Institute</u>), 1983.
- Kozumplik, Peter. Comparative Wartime Replacement Systems (DRAFT), (Washington, DC: U.S. Army Center for Military History), 23 May 1986.
- Spiller, Robert J. (Editor). S. L. A. Marshall at Leavenworth, Five Lectures at the U.S. Army Command and General Staff College, (Fort Leavenworth, KS), 1980.
- Strass, Thomas J., Major. The United States Army
 Replacement System: A Framework for Wartime Personnel
 Replacement, MMAS Thesis, (Fort Leavenworth, KS: U.S.
 Army Command and General Staff College), 1984.
- 1984 Art of War Symposium. From the DON to the DNEPR:

 Soviet Offensive Operations: December 1942 August

 1943, (Transcript of Proceedings), Center for Land
 Warfare, (Carlisle Barracks, PA: U.S. Army War
 College), 1984.