RUNNING BLIND IN THE DESERT: HOW THE U. S. ARMY CAN IMPROVE ITS RECONNAISSANCE PLANNING AND EXECUTION AT THE NATIONAL TRAINING CENTER

A MONOGRAPH
BY
Major Jeffrey R. Sanderson
Armor

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

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This monograph discusses tactical ground reconnaissance at the National Training Center. Two previous studies of this subject revealed that the U.S. Army had a major weakness in this area. Both studies recommended changes in doctrine which would reduce the problem. The monograph analyses current doctrine to determine if reconnaissance is integrated into all facets of tactical operations. The monograph then reveals the results of a study of Take Home Packages from units rotating to the National Training Center. The monograph then recommends doctrinal changes which should increase the current reconnaissance success rate.

The monograph first examines current doctrinal manuals to determine if reconnaissance is emphasized and integrated. The doctrine analyzed was that primarily in use by Armored and Mechanized Infantry brigade and task forces.

The monograph then examines forty NTC offensive battles (via Take Home Packages) to determine the current offensive success rate, the current reconnaissance success rate, and the correlation's between the two.

The monograph then analyses the data for trends and possible doctrinal and training solutions to rectify the problem trends. The solutions and conclusions sections offer doctrinal, training and some material solutions to improve the reconnaissance success rate.

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MONOGRAPH APPROVAL

Major Jeffrey R. Sanderson

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Approved by:

COL Douglas L. Tystad, MA — Monograph Director

COL Danny M. Davis, MA, MMAS — Director, School of Advanced Military Studies

Philip J. Brookes, Ph.D. — Director, Graduate Degree Program

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INTRODUCTION

The United States Army does a poor job of planning and executing ground reconnaissance. The Army has spent a tremendous amount of time and money attempting to improve its ground reconnaissance capabilities. For Army units the National Training Center (NTC) is arguably the most intense and realistic training simulation available anywhere in the world. Because of this realistic and challenging training environment the Army has extensively studied the problems and effects of ground reconnaissance at the NTC, and at times believed that solutions to the problems had been found. However, many missions closely resemble the one described below:

> *The mission seemed simple. Conduct a deliberate attack against an entrenched motorized rifle company to facilitate passage of follow on forces. The commander of Task Force 2-34 Armor was assigned this mission in February 1988. The commander knew his unit was well trained, but he also knew the unit had some deficiencies. Chief among these was his scout platoon. This platoon, consisting of three M113's and three M901 Improved TOW Vehicles, had not received the amount of training they needed due to the recent transition to the M1 main battle tank.*
> *During this mission, the scout platoon would conduct an area reconnaissance to obtain a comprehensive picture of the enemy's composition and disposition. The scout platoon started the mission smoothly, but soon met a perfectly emplaced complex obstacle. As the scouts began their reconnaissance of the obstacle they began to take losses from enemy forces overwatching the obstacle. Although they continued their reconnaissance they soon found themselves combat ineffective and unable to continue the mission. By this time the Task Force commander had begun moving his main body toward the objective. He knew the location of the obstacle but had few details on either the obstacle or the defending enemy company. His lead elements stumbled blindly into the obstacle and attempted to find places to either breech or bypass. Extremely accurate enemy artillery began falling upon his stalled columns and his losses multiplied quickly. Task Force 2-34 Armor never breached the obstacle. Soon an enemy chemical strike combined with enemy air paralyzed the Task Force, and the commander realized he did not have the combat power to continue his mission.*[1]

This experience is not unique. Reconnaissance has historically been an important ingredient to battlefield victory. Without properly planned and aggressively executed

reconnaissance, units stumble blindly into obstacles, attack directly into enemy strengths, and fail to find the enemy's mobile reserves.

This monograph will examine ground reconnaissance at the National Training Center to determine what the current reconnaissance success rates for rotational units is, and what can be done doctrinally, organizationally, or materially to improve the success rate for the future.

The NTC was designed to train combat arms battalions on complex and demanding tactical tasks that replicated, as close as possible, the hardships of actual combat. Since its inception in the early 1980's, the NTC and its world class Opposing Force (OPFOR) have defeated many rotating units. Due to the intensity of simulated combat at the NTC many doctrinal, organizational, and material studies have been conducted on relevant tactical warfighting issues. Therefore, rotating units that have fought at the NTC will be used as the study sample for this monograph.

The NTC does have some significant limitations which impact upon the study of reconnaissance. First, Divisional Cavalry units have deployed to the NTC in the past, but do not routinely deploy with a Brigade sized element. Second, while Regimental Cavalry units have numerous rotations, there is simply not the training area available to train both a Regimental Cavalry unit and a divisional main effort brigade. As a result, rotating brigades are faced with the worst possible scenario in that they must fight through the enemy's security zone, and fight for information with organic assets only. Divisional heavy brigades are not designed to fight in a vacuum, and are organizationally dependent upon Cavalry units to conduct missions such as clearing the enemy's security zone.[2]

Additionally, due to cost factors, many national and operational level intelligence assets that would be committed in a real war are not available.

Two previous studies of reconnaissance have also used NTC rotations as study samples. In 1985 the United States Army contracted the Rand Corporation to conduct a detailed study of tactical reconnaissance at the NTC. The Study was published in October 1987, and concluded that there was a strong positive correlation between successful reconnaissance and successful offensive operations.[3] The study found deficiencies in three major areas. First, there was a lack of emphasis on reconnaissance in existing doctrinal publications. Second, training at the service schools was inadequate on this subject. Third, the primary means of conducting reconnaissance at the battalion level, the battalion scout platoon, needed a different material capability. The Rand study had immediate impact. Doctrinal publications were updated, training at the service schools increased, and the scout platoon transitioned first to the M3 Cavalry Fighting Vehicle and then to its present vehicle the HMMWV.[4]

In his 1994 School of Advanced Military Studies Monograph Major Stephen Duncan partially reexamined the 1987 Rand study. He found that even with the dramatic changes made as a result of the Rand study, reconnaissance success rates had not significantly improved. In 1987 the reconnaissance success rate for battalion scout platoons, according to the Rand study, was 21%; in 1994 the success rate was 29%.[5] Duncan made five major conclusions concerning reconnaissance. First, there is a strong positive correlation between reconnaissance and successful offensive operations. Second, the Rand study was extremely worthwhile in that it assisted in clarifying the Army's reconnaissance philosophy. Third, the doctrinal changes resulting from the Rand study

stressed stealth and avoidance of the enemy as the primary method of scout employment. Fourth, reconnaissance training is a critical task and must receive the appropriate priority. Finally, staff integration during the planning process is the essential ingredient in successful reconnaissance operations.[6]

The significance of both the Rand and Duncan studies is twofold. First, both studies concluded that there is a definite cause and effect relationship between successful reconnaissance and successful offensive operations at the NTC. Second, given the statistical data on reconnaissance success rates, the U.S. Army had not drastically improved its ability to conduct successful reconnaissance at the NTC. The Army made a tremendous effort to improve the reconnaissance capability of the battalion/task force between 1987 and 1994, yet success rates have not improved accordingly.

This monograph will follow up both of the previous studies on reconnaissance at the NTC. First it will review the current doctrine concerning reconnaissance, with an emphasis on the changes brought about by Rand and Duncan. Next, using the armored and mechanized infantry brigade and battalion/task force, it will analyze data from NTC rotations 95-04 through 96-06 in an attempt to discover both the reconnaissance success rates for those rotations, and possible doctrinal, organizational, or training flaws. Although some material considerations will be addressed they are generally beyond the scope of this monograph. Finally, this monograph will provide analysis for future doctrine and organizational design as well as training considerations concerning ground reconnaissance operations.

DOCTRINAL ANALYSIS

Doctrine is the foundation of the U.S. Army's warfighting philosophy. It is an expression of how the Army will conduct future operations. The 1987 Rand study concluded that the reconnaissance success rate at that time was 21%. Following the publication of the study the Army began to revise reconnaissance doctrine. Duncan, in his 1994 monograph concluded that the success rate then had risen to only 29% even though many of the doctrinal publications had been updated. This study will analyze current doctrine at the brigade and battalion level to gain an understanding of the focus and priority regarding tactical reconnaissance in the publications. This section will also analyze the relatively new area of staff integration doctrine to gain an appreciation for the priority placed upon reconnaissance planning and preparation. Additionally, this section will analyze NTC OPFOR reconnaissance doctrine to form a basis of comparison with U.S. Army doctrine. The analysis is divided into these sections due to the diversity of reconnaissance issues involved.

Tactical reconnaissance doctrine at the Brigade and lower echelons is clearly inadequate. Although all of the primary doctrinal publications reviewed emphasized reconnaissance as fundamental to successful offensive operations, all seemed to convey a sense that some specialization is required to successfully conduct reconnaissance missions as opposed to a fully synchronized staff effort. Furthermore, the manuals reviewed unanimously conveyed the idea that reconnaissance is conducted only by reconnaissance units. It appears that the Rand study succeeded in updating

reconnaissance doctrine, or doctrine written for reconnaissance forces such as the cavalry troop and the scout platoon, but it had no substantial impact upon doctrine affecting the brigade and battalion. This point is critical in the sense that although the doctrine for the scout platoon's internal functions improved, the doctrine which integrated the scout element into the larger organization did not. Finally, the manuals all communicate the importance of reconnaissance, but offer no substantive doctrinal solutions for executing it.

FM 71-3 is the primary doctrinal source for the Armor and Mechanized Brigade. It contains numerous references to reconnaissance, and states that "reconnaissance and security are critical to the brigade's success"[7] but fail to indicate two vital points. First, it fails to coherently describe why reconnaissance and security are critical; and second, it fails to mention that the brigade has limited ground reconnaissance assets and often must task subordinate battalion/ task forces to conduct coordinated, detailed reconnaissance missions of vital areas and objectives. Reconnaissance is critical because accurate and timely reports from reconnaissance units set the conditions for successful offensive operations. The current intelligence standard for the conduct of a deliberate attack is that a unit locates 70% of enemy combat vehicle weapon systems, obstacles, and dismounted platoon positions before the attack.[8] To get to the 70% standard the unit must synchronize its efforts and integrate its staff products, but even then it may not win the battle or accomplish its mission. This failure to understand and develop reconnaissance plans results in units conducting deliberate attacks with inadequate information about the enemy, and in reality conducting a movement to contact rather than a deliberate attack due to the lack of information. Additionally, the manual seems to convey that the

battalion scout elements operate for the brigade, as opposed to working as an integral part of the brigade's overall collection effort.

The manual consistently refers to reconnaissance and security forces in the offense, but does not clearly delineate the dramatic differences between the two areas. The final draft version of FM 101-5-1 defines reconnaissance as "an operation designed to obtain information on the enemy, potential enemy, or the characteristics of a particular area. The precursor to all operations, which may be accomplished through passive surveillance, technical means, human interaction, or through fighting for information."[9] The same manual defines security as "measures taken by a military unit, an activity, or an installation to protect itself against all acts designed to, or that may, impair its effectiveness."[10] The 1985 version of FM 101-5-1 defined security as "those operations designed to obtain information about the enemy and provide reaction time, maneuver space, and protection to the main body."[11] FM 71-3 refers to both a reconnaissance and a security force during offensive operations stating that once the reconnaissance force makes contact it smoothly hands off the fight to the security force.[12] In this case the manual is clearly referring to an advance guard as the security force and to its scouts as the reconnaissance element. The vague use of the terms reconnaissance and security causes great confusion within the force and undermines the purpose of doctrine. Military words all have a precise meaning, and doctrine is a common language embedded into the force to ensure a common understanding or frame of reference. When the vocabulary becomes distorted and the meaning of the words change confusion often occurs.

FM 71-3 also briefly describes the function of reconnaissance in the movement to contact, hasty attack, deliberate attack, and combined arms breaching sections. Overall,

if the function of reconnaissance is as critical to the brigade's success as stated in the manual, then the manual has failed to place the appropriate priority on this topic. Although it does refer to other manuals consulted, as do all Army manuals, the user does not get a sense of the importance of integrating reconnaissance operations into all aspects of combat operations.

Field Manual 71-2, written for battalion/ task forces, also emphasizes reconnaissance. The manual states that reconnaissance is usually the first step in any offensive sequence, and should begin after the unit has received its mission.[13] The manual also includes a section on reconnaissance and surveillance planning and lists those assets within the battalion/task force having the capabilities to conduct these missions.[14] In discussing maneuver units the emphasis appears to be on surveillance as opposed to reconnaissance. The difference between the two being that surveillance is defined in the new final draft version of FM 101-5-1 as "a systematic observation of airspace, or surface, or subsurface areas, persons, places, or things by visual, aural, electronic, photographic, or other means" while reconnaissance is designed to gain information on an enemy , potential enemy, or a particular area. [15] The manual implies that maneuver units should execute the surveillance portions of the mission while the scout platoon conducts the reconnaissance missions. The manual fails to discuss the use of maneuver units in active reconnaissance even though the maneuver units are the only means of fighting for information at the battalion level. This is important because the battalion scout platoon, as currently configured, does not have the capability to fight for information. The manual was written in 1988 and the scout configuration at that time was in transition to the M3 Cavalry Fighting Vehicle. The current scout platoon, which

possess virtually no firepower or armor protection, is required to penetrate enemy defensive screens, avoiding the enemy's main body and obstacle system, then detect and report on enemy activity. The manual should address the use of maneuver units in the reconnaissance role since they have the combat power to conduct these missions. Additionally, the manual fails to adequately address the synchronization of reconnaissance within the plan referring only to synchronizing the Ground Surveillance Radar (GSR). Overall, this manual places emphasis on the subject of reconnaissance, but fails the reality test concerning the use of the battalion scout platoon as well as various other assets in a reconnaissance role.

The complementary manual to the two previously discussed is FM 71-123. It describes the various tactics, techniques, and procedures used at the Brigade, Battalion and Company level. This manual places a great deal of emphasis upon reconnaissance stating that successful reconnaissance is essential to mission accomplishment.[16] The manual also offers three bits of advice concerning reconnaissance. First, scouts require specific guidance and the taskings to scouts must therefore be clear and concise. Second, it emphasizes that reconnaissance takes time and that the earlier scouts or other reconnaissance assets can be deployed the better. Finally, the manual emphasizes that reconnaissance is a synchronized effort, and engineers, air defense, and fire support are integral to reconnaissance planning and execution.[17]

This manual places the appropriate emphasis upon reconnaissance but fails in two areas. First, the manual fails to entertain the possibility of a company/ team conducting reconnaissance for the Brigade. This concept, differing from the advance guard and reconnaissance in force, uses a line unit functioning almost as a cavalry troop to

eliminate enemy defensive screens. The use of a line unit to accomplish this task is not mentioned in doctrinal publications.[18] Second, although the manual refers to the importance of time and its effect upon reconnaissance, it does not address the subject to the level required for successful execution. The HMMWV mounted scout needs time to travel the required distances and needs time to stop and dismount to ensure his survival. This manual emphasizes reconnaissance, but it fails to integrate the various tactics and techniques required for successful reconnaissance missions.

FM 34-2-1 is the tactics, techniques, and procedure's manual for reconnaissance and surveillance planning, and is a direct result of the Rand study. The manual was published in 1991 and cites the Rand study in its introduction. This manual, by its nature, is focused upon reconnaissance and does an admirable job in explaining the S2's role in the process.

Unfortunately this manual has three major weaknesses that contribute to the confusion concerning reconnaissance. First, the manual places reconnaissance planning squarely in the realm of the S2.[19] This is common and many commanders fully expect their S2's to develop and execute reconnaissance plans. However, this often leads to a planning vacuum. The S2 is responsible for Intelligence Preparation of the Battlefield (IPB) and all of its associated products while the S3 is responsible for the operations portion of mission analysis, course of action development and analysis as well as order's production. The S3 must turn assumptions into facts using reconnaissance assets, and must be fully involved with the reconnaissance plan. Often reconnaissance is an afterthought rather than an integrated part of the plan because of the lack of staff coordination between the operations and intelligence staff officers. The manual

minimally discusses this coordination but fails to state its critical importance. Second, the manual devotes only three specific pages to offensive reconnaissance while devoting three times that amount to counterreconnaissance.[20] If, as this manual states, offensive success is tied directly to reconnaissance then this manual should place a great deal more emphasis on offensive operations. Finally, while this manual constantly refers to the time required for good reconnaissance it does not place the appropriate priority on the S2's internal time management process. According to FM 34-130, the companion manual to FM 34-2-1, the S-2 is expected to produce the modified combined obstacle overlay as well as the beginnings of a situation template before the mission analysis brief to the commander. This is followed by a continuous update of the situation template and the evolution of what the enemy would look like given the terrain he is defending.[21] All of this work is critical to the success of the operation, but the assets that are required to execute the reconnaissance plan are idle because the reconnaissance plan has not yet been developed. The reconnaissance plan is usually the last item to be completed in either the deliberate or quick decision making process, and as a result a great deal of reconnaissance planning time is lost. Overall, FM 34-2-1 is an excellent manual for the S2, but it lacks the synchronized focus required for successful reconnaissance.

There are few manuals that deal directly with the planning process. The vast majority of literature on this subject is published by varying directorates throughout the Army. Overall, these publications do an extremely good job of explaining the details, techniques, and procedures associated with tactical decision making, but they do a poor job of integrating reconnaissance into the process.

The primary source in this area is Student Text 101-5 *Command and Staff Decision Processes.* This manual is produced by the Command and General Staff College and is used as the doctrinal base in the training of officers. This manual is complete and comprehensive concerning the process of tactical decision making, but does not fully integrate reconnaissance into the process. The manual is filled with sections and paragraphs that discuss the importance of reconnaissance, but it does not describe how reconnaissance is integrated into the planning process. Given that the manual is designed to describe and explain the tactical decision making process, it does not place the appropriate emphasis on reconnaissance.

The Center For Army Lessons Learned (CALL) produces periodic literature on staff planning. In December 1995 CALL produced a newsletter on abbreviated planning. The newsletter described staff planning in detail and its relationship to time in a combat environment. It added many helpful hints concerning reconnaissance planning such as having the executive officer include reconnaissance planning in the staff's timeline, as well as hints on wargaming the intelligence collection effort.[22] Overall, this product integrated reconnaissance planning better than the majority of previously discussed doctrinal manuals.

The Mission Training Plan (MTP) provides commanders and their staff's with guidelines for the training and evaluation of their respective brigades and battalions. MTP's are focused on critical wartime missions. MTP 71-3 is designed for the Heavy Brigade Command Group and Staff. The 1988 edition of this MTP does not do an adequate job of emphasizing or integrating reconnaissance into the planning process. This MTP requires the S3 to "ensure {that the} intelligence collection effort is

synchronized with the scheme of maneuver."[23] It also tasks the S2 to inform the S3 if changes occur in the collection effort and to direct the intelligence effort.[24] This manual tasks the S2 to conduct numerous tasks from preparing the intelligence estimate to developing a physical security plan. It also requires the S3 section to conduct numerous tasks, and while almost all of these tasks are important, there is a lack of focus on reconnaissance planning, coordinating, and synchronization. The Initial Draft of the revised manual published in March 1996 has a decidedly improved focus on reconnaissance planning and synchronization. Although the new manual divides tasks by Battlefield Operating System (BOS) rather than by sectional responsibility, a rough comparison reveals that the S2 section now has an additional eight collective tasks, and the S3 section has an additional seventeen.[25] The vast majority of these additional collective tasks require staff coordination and synchronization of the operations plans. This manual stresses staff coordination and has a far more detailed section on reconnaissance planning.[26] Overall this initial draft manual places the appropriate priority on reconnaissance planning and staff coordination.

U.S. Army doctrine has many weaknesses concerning reconnaissance which show up in poor performance at the NTC. On the other hand, the OPFOR at the NTC has historically been successful in their reconnaissance efforts. Even though their success can be partially explained by fighting over the same terrain, it is important to note that they place a much greater doctrinal importance on reconnaissance. TRADOC Pamphlet 350-16 *Heavy Opposing Force (OPFOR) Tactical Handbook* is the primary doctrinal publication used by the NTC OPFOR. It is a capability based opposing force doctrine that is based upon many of the fundamentals described in former Soviet Union military

doctrinal publications. Based upon former Soviet doctrine, this OPFOR model represents a wide range of future conflict scenarios. Although this doctrine uses familiar organizations it is more flexible at the tactical level in its execution than were the Soviets. The manual devotes chapter four to reconnaissance which is prior to either the offensive or defensive doctrine chapters. The manual explains the seven OPFOR principles of reconnaissance. First, focus reconnaissance assets under a centralized command and control system. Second, reconnaissance operations must be continuous in nature and are not restricted to a single phase of the battle. Third, reconnaissance units must be aggressive and all the OPFOR assets must carefully adhere to the reconnaissance plan. Fourth, timeliness is critical in a fluid battlefield environment, and reports must be sent to higher headquarters as rapidly as possible. Fifth, Maskirovka, or the concealment of all reconnaissance measures and attempting to mislead the enemy are critical in reconnaissance operations. Sixth, since an OPFOR commander bases his decisions upon reconnaissance information, the information must be accurate and all available means are used to verify the accuracy of reported data. Finally, the information gathered from reconnaissance assets must be reliable.[27]

At both the OPFOR division and brigade level, the function of reconnaissance is completely the responsibility of the Chief of Reconnaissance who reports directly to the Chief of Staff.[28] Given the priority placed upon reconnaissance and an organizational capability that has reconnaissance assets at each level, OPFOR commanders can expect to obtain 80% of the possible targets in an area before attacking, as well as 100% of the high priority targets. Additionally, the OPFOR has an extremely flexible decision process that is based largely upon ground reconnaissance reports. Typically, an OPFOR

Regimental commander will complete his decision process with two to five maneuver options available to his force. His reconnaissance elements will eliminate all but two of his maneuver options, and the commander will normally make his final major maneuver decision after his forward detachment is in contact.[29]

This flexible system combined with redundant waves of ground reconnaissance certainly offers the OPFOR an advantage. Rotating units at the NTC do not have the advantage of division reconnaissance, nor do they place nearly the emphasis upon ground reconnaissance. OPFOR doctrine relies heavily upon human acquired information about the enemy, while current Army doctrine appears to be leaning toward technologically derived information. The human cost in investing in waves of ground reconnaissance is enormous as scouting is a dangerous business. Given that information derived from ground reconnaissance can be quickly and accurately transmitted, the OPFOR appears to have achieved information dominance at the NTC using this system.

U.S. Army doctrine is deficient in its publications concerning reconnaissance. A greater emphasis on staff integration and coordination is emerging in manuals written since 1995, but the fact remains that although reconnaissance is said to be important it is simply not emphasized to the level required for the completion of successful offensive operations. The vast majority of doctrinal publications emphasize counterreconnaissance, or security operations, more than offensive reconnaissance. OPFOR doctrine is just the opposite in that it places major emphasis on offensive reconnaissance while devoting only one paragraph to counterreconnaissance. Current doctrinal publications do not list principles of reconnaissance as does the OPFOR manual.[30] The U.S. Army is currently restructuring itself anticipating future technologies

and connectivity from national level resources directly to tactical units. Emerging doctrine appears to be reflecting the theme of a direct flow of information from echelons above division directly to the battalion. A result of this is that active reconnaissance is not emphasized in doctrine and a void exists in both planning and execution. If there is a direct correlation between successful reconnaissance and successful offensive operations as stated in the 1987 Rand study and the 1994 Duncan study, the U.S. Army is not implementing that fact into its doctrinal publications.

Rand had a profound effect on the Army with its initial dramatic findings. Duncan found that the Army had implemented many of Rand's recommendations and that performance had improved, although marginally. As seen, doctrine continues to be a problem area for the Army even after Rand and Duncan. What remains is to review performance since Duncan to determine whether reconnaissance has continued to improve or not so that recommendations for future reconnaissance doctrine can be made.

TAKE HOME PACKAGE ANALYSIS

This chapter attempts to determine the success rate for reconnaissance missions conducted at the NTC to see where the trend is going. It consists of an analysis of Take Home Packages (THP) from the NTC obtained from the Center For Army Lessons Learned (CALL) database.[31] The chapter begins with a narrative describing the methodology used to determine the ground reconnaissance success rate at the NTC. This is followed by the statistical results of the analysis and correlation's, as well as an analysis of the trends noted during the sample period. Finally, the chapter concludes with insights and conclusions on ground reconnaissance at the NTC.

A THP is a document produced by the NTC and accompanies the unit to its home station. It is used as a basis for future training and provides an analysis of what missions and tasks the unit trained on during its rotation to the NTC. The THP is arranged by battle with each unit participating in an average of four offensive and four defensive battles during the rotation. It provides a narrative description of the mission assigned to the unit for each battle and how well the unit accomplished it. A typical THP consists of both the brigade and task force Commanders' intent and mission statements, a narrative of the battle in which the unit fought, and an analysis by Battlefield Operating System (BOS) as to the overall strengths and weaknesses of the unit during that particular battle. In some THP's the additional element of battle highlights is available. It consists primarily of a narrative describing tactical battle command, or the unit's ability to see itself, see the enemy, and see the terrain.

THP's are strong historical documents and are often able to convey a complete and comprehensive word picture to the reader. Also, THP's allow low cost research to occur and are an extremely valuable tool in attempting to understand the long standing problems associated with ground reconnaissance at the NTC. They do not, however, provide all the data necessary for a comprehensive study of the subject, nor can a researcher expect to draw definitive conclusions from this limited database. Additionally, they do not provide graphics, nor do they regularly provide grid coordinate references which would be extremely useful in providing the reader with a sense of the terrain. THP's were the only analytic database used for the purposes of this study therefore, the best these results can show are positive correlation's, not definitive conclusions. The 1987 Rand study also used THP's, but they were used in conjunction with observer/controller comments, and actual first hand observation of the battles by the authors of the document.[32] Duncan, in his 1994 study used only the THP's from NTC rotations 93-09 through 94-07.[33]

The sample size for this study is twelve rotations encompassing NTC rotations 95-04 through 96-06. Two rotations during this period were not included and one rotation (NTC 95-09) was canceled. The two excluded rotations were NTC 95-11 which was conducted primarily by a divisional cavalry squadron, and NTC 95-12 which was conducted by a cavalry regiment. Although an intensive study of these units is necessary, it was beyond the realm of this monograph. The sample size analyzed consisted of 40 total offensive battles. Of the 40 battles, 29 were deliberate attack missions, and the remaining 11 were movement to contact missions. The research centered on the armor task force executing the training, but 10 of the 40 battles were also analyzed at the

brigade level in order to gain a comprehensive understanding of the problem. This was done to determine trends and to check vertical BOS synchronization. The analysis was conducted on the force on force portion of the training only.

Success in offensive operations was defined in the THP as whether the unit accomplished its assigned mission. It was clear in the THP because the NTC used MTP standards in defining success. The movement to contact was similar in that the battle summary was clear as to whether the unit accomplished its assigned mission.

Determining whether or not a unit's reconnaissance effort was successful was a more difficult task.[34] In some cases the THP battle summary would list reconnaissance failures as the primary or contributing cause to offensive failure, but the majority of studies did not. As a result, this study used a six step subjective process to determine reconnaissance success or failure. First, the analyst had to have a clear understanding of both the brigade and task force commander's mission and intent. The second step was to carefully analyze the entire battle summary looking specifically for direct references to reconnaissance successes or failures. Third, the analyst compared the mission statement of the unit with the actual endstate of the battle as described in the battle summary. The fourth step was to conduct a systematic and comprehensive review of the Battlefield Operating Systems. This included a review of each strength and weakness listed, as well as, horizontal and vertical linkages between the different operating systems.[35] Also included in this step was the examination of the available ground reconnaissance assets beginning and ending combat power. The fifth step was to review all comments concerning tactical battle command with particular attention paid to the ability of the unit and its commander to see the enemy. The final step was to analyze all the data and

subjectively conclude whether the unit conducted successful reconnaissance or failed to do so.

The results revealed that during this study rotating units had a 10.0% overall success rate on offensive missions. The complete listing of results by rotation and by battle is at Appendix 1.

TOTAL OFFENSIVE MISSIONS: 40	DELIBERATE ATTACKS MISSIONS: 29	MOVEMENT TO CONTACT MISSIONS: 11
TOTAL SUCCESSES: 4	TOTAL SUCCESSES: 4	TOTAL SUCCESSES: 0
SUCCESS RATE: 10.0%	SUCCESS RATE: 13.7%	SUCCESS RATE: 0

Table 1 - Offensive Mission Success Rates

This table shows that rotating units were not successful in either penetrating the enemy's defenses with sufficient combat power to continue the mission, or developing the situation adequately enough to win in a movement to contact the vast majority of the time. The range of reasons as to why this occurred during this sample study are numerous, but if the reconnaissance success rates were correspondingly low then this fact would once again revalidate the 1987 Rand and Major Duncan's monograph studies conclusion that a positive correlation does exist between successful reconnaissance and successful offensive operations.

The overall reconnaissance success rate for the study sample was 17.5%. These statistics resoundingly revalidate the Rand conclusion.

TOTAL OFFENSIVE MISSIONS: 40	DELIBERATE ATTACKS: 29	MOVEMENT TO CONTACTS: 11
RECON SUCCESSFUL: 7	RECON SUCCESSFUL: 6	RECON SUCCESSFUL: 1
RECON SUCCESS RATE: 17.5 %	RECON SUCCESS RATE: 20.6%	RECON SUCCESS RATE: 9.0%

Table 2 - Reconnaissance Success Rates

Not all cases in the sample were clear enough to determine whether the unit's reconnaissance effort was successful. These cases were then subjected to the entire six step subjective process again. Unfortunately, a large number (12.5%) could not be resolved, and are listed as unclear in the results section.[36] Even if all those missions that were rated as unclear were added to the success column the success rate would only reach 30%.

The success rate for deliberate attacks was 13.7%, and the reconnaissance success rate for deliberate attacks was 20.6%. As noted in table 2, none of the 11 movement to contact missions were conducted to MTP standard, and only one of the missions had a successful reconnaissance effort. There were four total successful deliberate attacks out of 40, three of the four had correspondingly successful reconnaissance missions. The majority of successful reconnaissance missions occurred late in the rotation, or after training day 9. This adds weight to the argument that units do improve dramatically

during the rotation. Appendix 1 also contains the rotational training day which tends to validate this statement.

Anomaly's did occur during the study. One unit lost 8 of 10 available scouts in an attempt to infiltrate them deep into enemy territory, yet the unit did penetrate the enemy's defenses with sufficient combat power to continue the mission, and were judged successful in accomplishing their mission.[37] While this did occur it was not the norm. In over 60% of the THP's the standard comment was that the unit failed to see the enemy. This was a compilation of both staff planning and scout execution that most often led to failure.

The THP's revealed seven major trends which were clearly evident during the course of the study. The trends are listed in order of the frequency in which they occurred:

1. The Reconnaissance and Surveillance plan is an S-2 only product.
2. The Reconnaissance and Surveillance plan is an afterthought.
3. The Reconnaissance and Surveillance plan is not designed to answer the commanders Priority Intelligence Requirements (PIR).
4. Poor infiltration planning of the scout platoon.
5. Task forces unaware of the brigade's intelligence collection plan.
6. Information dissemination within the TOC needs improvement.
7. Establishing trigger lines which will move the scouts once contact by the main body has been made.

A combination of trends was often noted in the study. An example of this was the S-2 producing a late reconnaissance plan in isolation from the remainder of the staff, and the

scout platoon failing to properly plan its infiltration routes. The effect of these two shortcomings invariably led to reconnaissance and, subsequently, mission failures.

The first trend noted was that the S-2 appeared to be producing the reconnaissance plan in a vacuum without the input, advice or counsel of either the commander or fellow staff officers. This invariably led to a total lack of staff integration concerning reconnaissance. On numerous missions the scouts would encounter the enemy and take casualties only then to realize that there was no coherent casualty evacuation plan. They were also given the mission to conduct deep infiltrations without any additional communications equipment or a plan for establishing communications with the TOC. They were often tasked to not only penetrate the enemy's defenses, but also to call for and adjust indirect fires on the enemy yet they were not included in the indirect fire plan. They were often tasked to conduct obstacle reconnaissance without the assistance of engineers. Although scouts are trained to conduct this task, they do not have the expertise of the engineer force that will be required to breech the obstacle if a bypass cannot be found.

Unfortunately, this trend appeared to last throughout the duration of the rotation. Although S-2's appeared to have been notified about this problem early in the rotation it continued to appear in the later stages of the rotation. Two possibilities as to why this continued to occur are that the staff never really understood the necessity to integrate this product, or by training day 14 they were too tired to place the necessary emphasis upon it.

The second trend was that the reconnaissance and surveillance plan was an afterthought as compared to the original tactical plan, and was often completed late in the planning process. The S-2 has a tremendous amount of work that he needs to accomplish

before briefing the remainder of the staff on the enemy situation. While the S-3 and the other staff officers are determining the mission and the unit's status, the S-2 is attempting to obtain a complete enemy picture. The mission analysis process requires the S-2 to produce numerous products that clearly show the enemy in relation to the ground that he is defending. All of this is necessary in order for the staff to receive the commander's guidance and begin to develop friendly courses of action. The S-2 continues to develop new information from a variety of sources and refines the products that he has already produced. The staff then participates in the analysis or wargaming portion of the decision making process. At this time the S-2 is required to act as if he were the enemy and determine what decisions the enemy commander might make. The result of this process allows the commander to decide which course of action he wishes to implement. The common theme seen clearly in this study was that the S-2 produced a reconnaissance plan that supported the chosen course of action after the commander had decided and the order had been written.

The THP's revealed that often the result of a late reconnaissance plan was that the plan was issued late to the unit primarily charged with executing it, the scout platoon. Reconnaissance planning at the scout platoon leader level requires detail and is a time consuming process. If the scout platoon leader fails to take the time to properly plan the infiltration of his platoon, he risks suffering casualties due to a poorly planned mission. If he chooses to plan in detail he also runs the risk of suffering casualties in that he may have a detailed plan which must be implemented in daylight due to the planning time required for success.

There appear to be three major reasons this problem continued to exist throughout all rotations. First, the S-2 is overwhelmed with the products that he must prepare and does not have the time to devote to reconnaissance planning. Second, the S-3 fails to realize that his input to the reconnaissance plan is critical as he is directly responsible for both developing and altering the chosen course of action. Third, doctrine fails to provide the requisite insight into this problem. If the staff follows the decision making process to the letter it will produce a competent operations order, but it will not produce a reconnaissance plan which supports that order because reconnaissance is not doctrinally integrated into the decision making process.

The third major trend seen in the study was that reconnaissance plans were often developed without regard to the commander's PIR. The commander is responsible for focusing all of his reconnaissance assets. He normally does this by stating three to five items of information that he must know about the enemy in order to make sound and timely decisions. The PIR then becomes the focus of the entire reconnaissance effort. The staff develops a reconnaissance plan that answers the PIR and provides the commander with the information he needs to make decisions. This often did not happen early in the rotation, but the trend showed units improving during the rotation.

The fourth trend noted in the sample was the lack of infiltration planning for the scout platoon. This trend was influenced by previous trends, especially reconnaissance planning being an afterthought. Many THP's noted that the scout platoon was not given sufficient time to conduct troop leading procedures and therefore often crossed the line of departure without a coherent plan.

The scout platoon leader is usually among the best junior officers in the battalion, and is normally chosen with great care. Although he may be a high performing officer, he does not necessarily have the experience required to conduct infiltration missions. Not only does he need a highly workable plan from the staff, but he also needs guidance on how and where to infiltrate the enemy's lines. Often in the study sample, scout elements would be destroyed attempting to infiltrate enemy positions, or would be destroyed by the enemy counterreconnaissance force. In either case the scout platoon lost valuable assets plus the time required to evacuate their wounded soldiers from the battlefield. Once they had successfully penetrated the enemy they often would not have planned far enough in advance to know what exactly to look for, or how their reconnaissance objective related to the task force plan of attack.

The majority of the infiltration problems appeared to subside as the rotation continued. By training day 11, the majority of scout platoons could successfully infiltrate enemy positions. Training and practice appear to be the answer to eliminate this trend as a problem.

The fifth trend was that task force S-2's were often cited in the THP's as being unaware of the brigade's intelligence collection plan. The S-2's would task their reconnaissance assets in a manner they felt would best support their task force without regard to the brigade's collection needs. Analysis of the brigade portions of the battles revealed that although the brigade was often late in disseminating the collection plan to subordinate units, they did produce and disseminate it. The same time and workload management problems that hampered the efficiency of the task force S-2's now appeared to also hamper the brigade S-2's.

Based upon the analysis of the THP's, there are two primary reasons for this to occur. First, the brigade commander is late in determining what his PIR are, and therefore dissemination is late to the subordinate units. This occurred in half of the brigade battles analyzed, and it appeared that the brigade produced its collection plan as an afterthought. Second, the task forces have already begun formulation of their reconnaissance plan and are reluctant to change. Their rationalization of the problem is that their scout or other ground reconnaissance units will be located physically close enough to also identify items of interest to the brigade. Unfortunately, they do not realize that the brigade needs more time to execute decisions because the brigade bases its decisions upon reports transmitted from the scouts to the subordinate TOC then to the brigade TOC. Therefore reconnaissance elements that the task force believes to be close enough in reality are not, and the brigade loses the most precious of tactical resources which is time. A properly nested plan from the brigade would require the task force to answer the PIR required for the brigade, and the task force commander's PIR would mirror or answer the brigade commander's. The THP's appear to show fault on the brigade for producing late collection plans, and on the task forces for their willingness to fight in a vacuum.

In one case the reverse of this trend occurred. The brigade commander had all the brigade's scout platoons under his task organization and his control.[38] The mission had limited success under this organization. The majority of THP comments stated that since the unit had never trained in this configuration it had few standard operating procedures and was a difficult organization to control. The THP's also stated that the task forces

that were without the use of their own internal reconnaissance assets were unaware of the situation and failed to see the enemy.

The sixth trend was a lack of information dissemination inside the task force TOC. Reports were received from the reconnaissance elements and were not acted upon. This was often noted in the THP's when the enemy's combined arms reserve began their counterattack to blunt the penetration of the main defensive belt. The scouts would find the counterattacking force, report its location and direction of movement to the TOC. While the task force commander and his S-3 may have monitored the report, no significant action such as fire planning or repositioning of forces appeared to take place. Once PIR are confirmed by reconnaissance or maneuver elements they should be broadcast over the command radio or digital net. This helps to ensure a common situational awareness throughout the task force. Additionally, the THP's also mentioned failure to report such items to the brigade as contributing factors in the failed mission.

Information dissemination has been a long standing problem at all of the training centers.[39] It appears that while mistakes of this nature continued to occur during the later training days of a rotation they were with much less frequency. The training experience itself appears to dissolve this trend over time, but when the failure to disseminate critical reconnaissance information did occur it was almost always key in the defeat and clearly noted in the THP's. Additionally, the THP's often noted whether a TOC was monitoring the Commanders Critical Information Requirements (CCIR), and cited this as a trend from one battle to the next for that task force.[40]

The final trend noted in the study was the failure of task forces to plan for or actually reposition their reconnaissance assets once contact between main body forces

was made. This led to confusion as the main body was often caught unaware of enemy counterattacking forces entering the battle. Like previous trends, this one also decreased during the rotation.

The cause behind this trend is unknown, but it appears that those units that had problems during earlier parts of the rotation in such areas as infiltrating their reconnaissance elements also had this problem. Analysis of the THP's show that units which began the rotation with poor reconnaissance performances had problems determining what they wanted their scouts to do once they were infiltrated during the later stages of the rotation. Although the unit may have improved during the course of the rotation, the task of fully integrating the reconnaissance plan throughout the duration of the battle eluded them. The task of producing a fully synchronized reconnaissance plan is difficult, and many of the units never reached the level of developing a fully synchronized plan which lasted the duration of the battle.

There are three major conclusions that can be drawn from this research. First, the U.S. Army has not dramatically improved its ability to conduct reconnaissance operations since the publication of the 1987 Rand study. This study shows that our units are unsuccessful in conducting reconnaissance operations more than 70% of the time. Second, the process that we use to solve tactical problems does not integrate reconnaissance throughout the process, and our units are failing to adjust the process to make it work. Finally, on a more positive note, reconnaissance improves through training as evidenced by this study.

There are solutions that can and should be made to address the procedural problems noted in this study. The key to future victories is to enter into a training center

rotation with reconnaissance elements that are able to accurately identify 50% of enemy combat vehicle weapon systems, obstacles, and dismounted platoon positions. By the end of the training center rotation the reconnaissance elements should be able to accurately identify 70% of enemy combat vehicle weapon systems, obstacles, and dismounted platoon positions which is the MTP standard required for a deliberate attack.

SOLUTIONS

From the analysis two solutions can be applied that should increase the reconnaissance success rates, and therefore contribute to overall increased success rates. First, the army must change the doctrinal view of reconnaissance, and then must improve training methods concerning the entire reconnaissance process.

First, doctrinal changes are fundamental. Doctrinally, the Army needs to update current doctrine with a focus on reconnaissance, and modify the Deliberate Decision Making Process (DDMP) to include a specific step for reconnaissance. This coupled with emerging staff integration doctrine, and a review of the doctrinal limitations of the present material capabilities will lead to greater success when tied to mission focused training.

The first solution is to revise current doctrine. This was supposedly accomplished after the 1987 Rand study was published. While this did occur to some extent, it occurred in reconnaissance doctrine as opposed to maneuver doctrine. Cavalry and scout platoon manuals were updated and revised, but major changes integrating reconnaissance into the 71 series of field manuals did not occur. As a result only part of the problem was solved. Scouts had updated, workable doctrine, but it was not integrated into the higher headquarters doctrinal manuals. The result was that reconnaissance success rates did not improve. Additionally, even though Rand and Duncan showed a positive correlation between successful reconnaissance and successful offensive operations this fact failed to be emphasized in doctrinal manuals.

In updating doctrine, integrating reconnaissance planning into the Deliberate Decision Making Process would place the necessary emphasis. The top three recurring trends of this study were that reconnaissance was an S-2 only product, that the reconnaissance plan was an afterthought, and that the reconnaissance plan did not answer the commanders PIR. Currently, the DDMP does not contain any formal steps which relate directly to reconnaissance, therefore these problems continue to exist.

The DDMP is the doctrinal process which tactical units use in making combat plans and orders. It is a combination of commander and staff actions and interactions. It consists of the commander's visualization process integrating with the staff's estimates of the situation in four basic areas. First, both the commander and the staff conduct an independent analysis of the upcoming mission. This concludes with an information exchange briefing designed to determine both the units current and projected status, and the units unique contribution to the overall effort. The commander then issues guidance to the staff who then collectively develop courses of action which will effectively solve the tactical problem. This is followed by a systematic analysis of the developed courses of action commonly referred to as a wargame. At the conclusion of the wargame the staff then recommends a solution to the commander. The commander then chooses a course of action and the staff produces an operations order.[41] The diagram shown in appendix 2 depicts the current doctrinal process.

The DDMP needs to be changed at the brigade and task force level. The process should be revised to reflect production of an initial reconnaissance plan after receipt of commanders guidance, but prior to course of action development as shown in appendix 3. At brigade level, the plan must go out as a warning order to allow the task forces to

begin parallel planning. At task force level, this would allow the reconnaissance assets the time required to conduct detailed planning. At the conclusion of the mission analysis briefing and commanders guidance (which includes PIR) the staff should be able to determine and prioritize those Named Areas of Interest (NAI's) which are critical to the operation, and should be able to produce as a minimum a detailed warning order for the reconnaissance assets. This provides time for those assets to properly plan their mission and forces the staff to produce an integrated plan.

The product that the staff needs to produce during this time is an initial reconnaissance and surveillance plan which alerts the scouts as to the NAI's location, the time frame the NAI is to be monitored, and what specifically is the reconnaissance target. The product must be wargamed later in the staff planning process, but this initial plan will enable the scout platoon to begin planning its infiltration into the area. The majority of the initial NAI's will not change based upon the wargame because they are designed to confirm or deny major specific information about the enemy. The result of this initial reconnaissance and surveillance plan is an integrated product which allows planning time for the scouts, and the reconnaissance plan is completed earlier in the process and is not an afterthought.

Some smaller doctrinal changes to the DDMP must also be made. Commander's must understand that PIR drives the reconnaissance process, and that one of their first doctrinal priorities must be to determine those elements of information about the enemy they must know in order to make current and future decisions.[42] The commanders portion of the mission analysis step should be revised to consist of three vital steps.[43] First, the commander must understand his unique contribution to his higher headquarters

plan. Second, the commander must have a clear understanding of the timing of the plan, and the elements that his unit must synchronize in order to accomplish their portion of the plan. Finally, the commander must develop and articulate to his staff what his PIR are, and roughly when he expects those PIR to be answered in order for him to make future decisions. This doctrinal change, as shown in figure 1, allows reconnaissance to

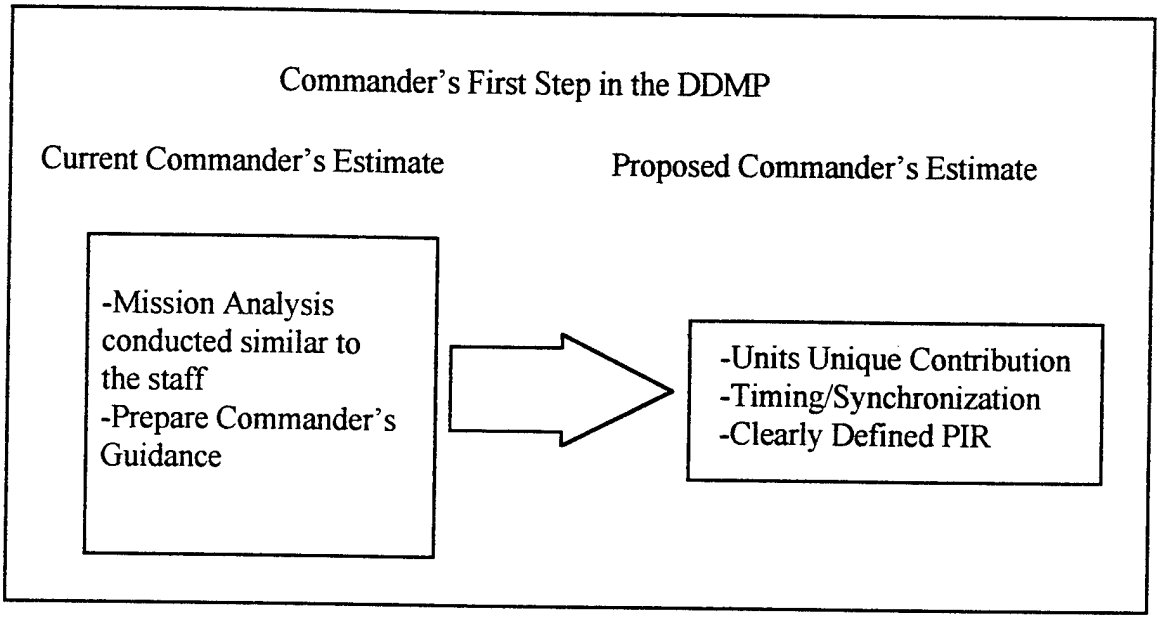


Figure 1

drive the plan rather than the plan driving reconnaissance.[44]

The basic theme that must be conveyed in future doctrine is that a tactical commander who understands his unique contribution to the overall effort, has a clear understanding of the timing and synchronization of the plan, and effectively articulates and executes PIR has a greater chance at success than those who do not understand those concepts. All of these ideas lead to purpose oriented tactics which allow a commander freedom of action within his zone or sector as long as his actions contribute to, or

reinforce, his higher headquarters purpose. Commanders in this process must expend the time required to develop PIR and then articulate that PIR to the staff during commanders guidance. The staff can then develop a reconnaissance plan which answers the PIR. When reconnaissance plans are a direct result of PIR then reconnaissance is driving the plan.

Next, doctrine must make one individual responsible for reconnaissance. OPFOR doctrine clearly states the important role played by the chief of reconnaissance, and the NTC OPFOR have had great success with this concept. They place responsibility for reconnaissance on one individual who reports directly to the commander as opposed to making reconnaissance a group effort or collective task. In a U.S. task force there are three possible individuals who can fulfill this role. They are the executive officer, the S-3, and the S-2. The executive officer is responsible for a wide variety of tasks ranging from staff integration of combat plans to ensuring that the task force has the proper amount of logistics. The S-3 is the primary planner of tactical operations prior to combat, as well as the commander's primary control mechanism during combat. The S-2, who has de facto responsibility for reconnaissance in many units, is primarily responsible for intelligence preparation of the battlefield and all of its associated products.

Placing sole responsibility for reconnaissance on either the S-3 or the S-2 will result in an S-3 or S-2 only product. These staff officers perform important functions for the command, but neither of them are currently responsible for total staff integration. In current doctrine the executive officer is responsible for staff integration and the synchronization of the plan. He is also responsible for the internal time management

within the TOC, and is the individual responsible for the staff execution of the DDMP.[45] Although in practice the S-3 might be charged with the task of executing the staff portion of the DDMP, the executive officer is doctrinally responsible for integrating the required products. Additionally, the S-3 at task force level is normally forward during the battle with a supporting effort while the executive officer is in charge of the TOC.

Although the executive officer has major logistic responsibilities, these can be planned in enough detail during the planning process to allow other officers such as the Battalion Motor Officer, S-4, and HHC commander to execute during the battle. The Executive Officer then becomes primarily a logistics planner and integrator as opposed to an additional logistics executor. He can accomplish the majority of these duties from the TOC, allowing him to continually monitor and direct the reconnaissance effort. Therefore, the executive officer is the individual who needs to be in charge of the reconnaissance effort from beginning to end. The executive officer is currently doctrinally responsible for managing both CCIR and combat information. The only step that needs to be added is to fix doctrinal responsibility for reconnaissance on one senior officer. The solution is to make the executive officer doctrinally responsible for reconnaissance.

These changes in staff integration doctrine coupled with training at the service schools will increase the reconnaissance success rates of our units, but the doctrine must clearly emphasize the limitations of much of the Army's current reconnaissance equipment. The HMMWV mounted scout cannot normally conduct daylight infiltration of enemy positions as a preamble to a deliberate attack. He does not have the capability to fight for information, nor does he have the protection necessary for survival should he

be forced into a fight. The scout platoon is not a cavalry organization, and it cannot defeat nor destroy enemy security zone forces. This organization relies upon stealth for its survival. Stealth based operations take time to plan and to execute. Units cannot expect their scout platoon to perform missions that are beyond their inherent capabilities. These limitations must be emphasized in our doctrine and in all training activities. This study, which consisted solely of THP and doctrinal analysis, revealed that units were consistently attempting to employ their HMMWV mounted scouts in missions which they had little chance of success. The Army is currently designing a new scout vehicle, but until this new vehicle is fielded units must be aware of the limitations of the current scout platoon.

Doctrine must spell out in the 71 series of field manuals the limitations of our current material capabilities in order for the reconnaissance success rate to improve.[46] Based upon the data gathered in the conduct of this study, the current scout platoon has the ability to conduct limited visibility infiltrations using stealth, it has the ability to conduct route or area reconnaissance during limited visibility, and it has the ability to conduct daylight long range surveillance of NAI's. It does not have the ability to conduct daytime infiltrations nor area reconnaissance missions except in cases of extremely compartmented terrain, and it does not have the ability to conduct limited visibility surveillance. These capabilities and limitations must be written into both FM 71-3 and FM 71-2 in order to ensure their correct employment by brigade and task force planners.

Aside from the doctrinal changes previously mentioned, the Army also needs to improve on its reconnaissance training methods. Realizing that budget constraints do not allow for the intensity of home station training that units receive at the NTC, there are

some training methods which can be implemented at home station that will increase both the current reconnaissance and offensive mission success rate. Units must be in a position to enter the NTC rotation with the requisite skills to drastically increase their combat capabilities. This study shows that units are currently unsuccessful in 90% of their offensive missions, and are also unsuccessful in over 80% of their reconnaissance missions. Units must be trained to a level that allows them to leave a rotation meeting the MTP standard of locating 70% of enemy combat vehicles, obstacles, and dismounted platoon positions prior to a deliberate attack. According to the research data provided in appendix 1 of this study, units enter with few skills and although they show tremendous improvement during the rotation, they leave the rotation remaining unable to accomplish fundamental missions.

First, staff's must train themselves to produce clear, concise, and integrated orders. The tactical decision making process is a difficult item to master. It is a collective task which suffers a tremendous amount of skill decay. Units cannot simply decide to follow this doctrinal procedure without practice and be successful. They must train frequently in order to be timely, creative, and successful. Once the basic process is understood, units should then continue to raise the standard until they can overcome the majority of problems associated with information dissemination and staff coordination under pressure.

The staff must train using simulations that are a low cost method of maintaining proficiency. Simulations allow the staff to practice the minimum skills necessary to enter into a training center rotation. Examples of current simulations which have the potential of challenging the staff are JANUS and SIMNET. JANUS is a brigade and task

force level attrition based simulation which allows the staff to develop and execute a plan under realistic TOC conditions. While it does have significant limitations, it has the potential to create a challenging information management environment.[47] SIMNET is primarily a task force level maneuver training simulation which also challenges the staff's ability to operate in an intense information environment.[48] WARSIM is the simulation of the future which promises a challenging, realistic, multidimensional training environment for brigade and task force staff's.

Although training the planning of combat operations is essential, it is also important to train the scout platoon. The scout platoon requires extensive training management. While it is the company commander and scout platoon leader's responsibility to train the scout platoon, they generally do not have adequate resources to train the organization to standard. Significant resources are required to train scout platoons to the level of proficiency required for success at the NTC or in combat. While the battalion headquarters may be able to adequately resource the training of its scout platoon on occasion it cannot consistently resource this training. Therefore, the brigade should be responsible for the evaluation and training of scout platoons because the brigade has access to the resources required to conduct the training on a frequent basis.

Scout platoons must accomplish three important tasks in order to accomplish their assigned missions. First, they must produce a plan for the infiltration of enemy defensive positions. Training scout platoon leaders and platoon sergeants in this difficult task requires someone who has actually done it under realistic conditions. The Scout Leaders Course conducted at Fort Knox, Kentucky trains leaders on this task and should be a mandatory requirement for all platoon leaders and platoon sergeants. Although the

battalion may have leaders who have the expertise to train the platoon on infiltration planning, they do not have the resources to conduct actual infiltration training missions on a frequent basis.

This leads to the second skill required of scouts which is the actual execution of the infiltration. This type of training requires pooling resources within the brigade, and a dedicated opposing force determined to stop the infiltration. This training is difficult to simulate and requires resources that the task force would have difficulty acquiring on a regular basis. Therefore, the brigade must be the training resource provider for each of its scout platoons.

The final task scouts must accomplish is reporting. This requires the staff to be integrated into this type of training in order to both produce detailed reconnaissance plans, and to monitor and adjust the execution of the plan. It accomplishes little to expend the resources of the brigade on scout lanes and then not train the command and control mechanism they will go with to war. This training requires both the scouts and the TOC in order to produce the greatest training benefit.

Finally, units rotating to the NTC should be accompanied by elements of the divisional cavalry squadron. The ground cavalry troop is organized and equipped to conduct reconnaissance operations in front of divisional units, and should rotate to the NTC with each maneuver brigade. Analysis of THP's conducted during this study showed that rotating units had difficulty fighting through the enemy's security zone. In actual combat, the task of clearing the security zone would normally belong to the divisional cavalry squadron. Since divisional cavalry ground reconnaissance troops do not habitually rotate to the NTC with maneuver brigades, the brigades must clear the

security zone using internal reconnaissance assets to locate the enemy, and internal maneuver units to clear the zone. The addition of a ground cavalry troop to the rotation would allow brigades to conserve their combat power for decisive action, and allow task force scout platoons to infiltrate and conduct reconnaissance of the enemy's main defensive belt. This would better replicate actual combat conditions, and it would also increase the reconnaissance success rate at the NTC. This training method demands further testing at the training centers.

Each of these recommendations will increase the current reconnaissance success rate that should then increase the overall offensive mission success rate. These recommendations are simple in concept, yet sometimes difficult in execution. They are solutions to problems that can be implemented by local commanders. They are short term, commonsense solutions to solve a problem that has confronted the U. S. Army since the early 1980's.

CONCLUSIONS

The Rand study provided valuable insight into the problems of reconnaissance not only at the NTC but worldwide. It helped focus our reconnaissance efforts through doctrinal, material, and training changes. Unfortunately, the changes adopted as a result of the study were not sufficient to correct the problem. Doctrine was updated but not integrated, the HMMWV is not the optimum scout vehicle, and although our units improve during the course of an NTC rotation they normally do not win the first battle.

This monograph shows that the U.S. Army failed in its attempt to fully integrate reconnaissance doctrine. While the Rand study fully identified the problem, Duncan showed in his monograph that the reconnaissance success rate appeared to be only slightly increasing since Rand and sought to find out why this occurred. His conclusion was that staff integration combined with doctrinal changes would solve the problem. Although this study agrees with both Rand and Duncan nothing appears to have changed. In fact, this study shows that the U.S. Army is performing at a lower reconnaissance level than it was when studied by Rand in 1987 and by Duncan in 1994.

The Rand study and the Duncan monograph showed a strong positive correlation between successful reconnaissance and successful offensive operations. This study has partially revalidated that claim. This monograph examined the ground reconnaissance success rate at the NTC and concluded that that rate during this study was 17.5%. It also concluded that the U. S. Army has not made major doctrinal improvements since the publication of the Rand study, and it has recommended what doctrinal changes should occur.

Doctrine is the essential ingredient required to change the U.S. Army's current view of reconnaissance. It appears that not a great deal has changed since discovery of the problem back in the mid 1980's. The primary reason change did not occur is because reconnaissance doctrine was not fully integrated into maneuver doctrine. Although a great deal of emphasis has been placed recently on staff integration doctrine, it also appears to lack emphasis on reconnaissance. The recommended solutions put forth in this monograph were designed to affect a change in the way the U.S. Army views reconnaissance. The doctrinal recommendations consist of a slight change in the planning of reconnaissance, a change in the way commanders view reconnaissance, and assigning direct responsibility for reconnaissance to the Executive Officer. These changes are meaningless unless they are integrated into maneuver doctrine.

Additionally, this monograph addressed the need for intensive and consistent training of both the staff and the scout platoon. All of the analysis conducted pointed to either a doctrine or training solution. It is clear from the analysis that many units have good training programs which set the conditions for victory at the NTC. The problem is that the NTC is not war but is a complex simulation of war, and many of the units in the study who did not do well at the NTC would not do well in actual war. Although in theory training is governed by sound doctrine, it is often in execution a matter of the commander's philosophy. Commanders need to realize the importance of reconnaissance on future battlefields and incorporate reconnaissance into their warfighting and training philosophies.

The final significant view of this monograph is that the NTC battle is fought in a vacuum with one or two task forces pitted against a world class OPFOR whose one and

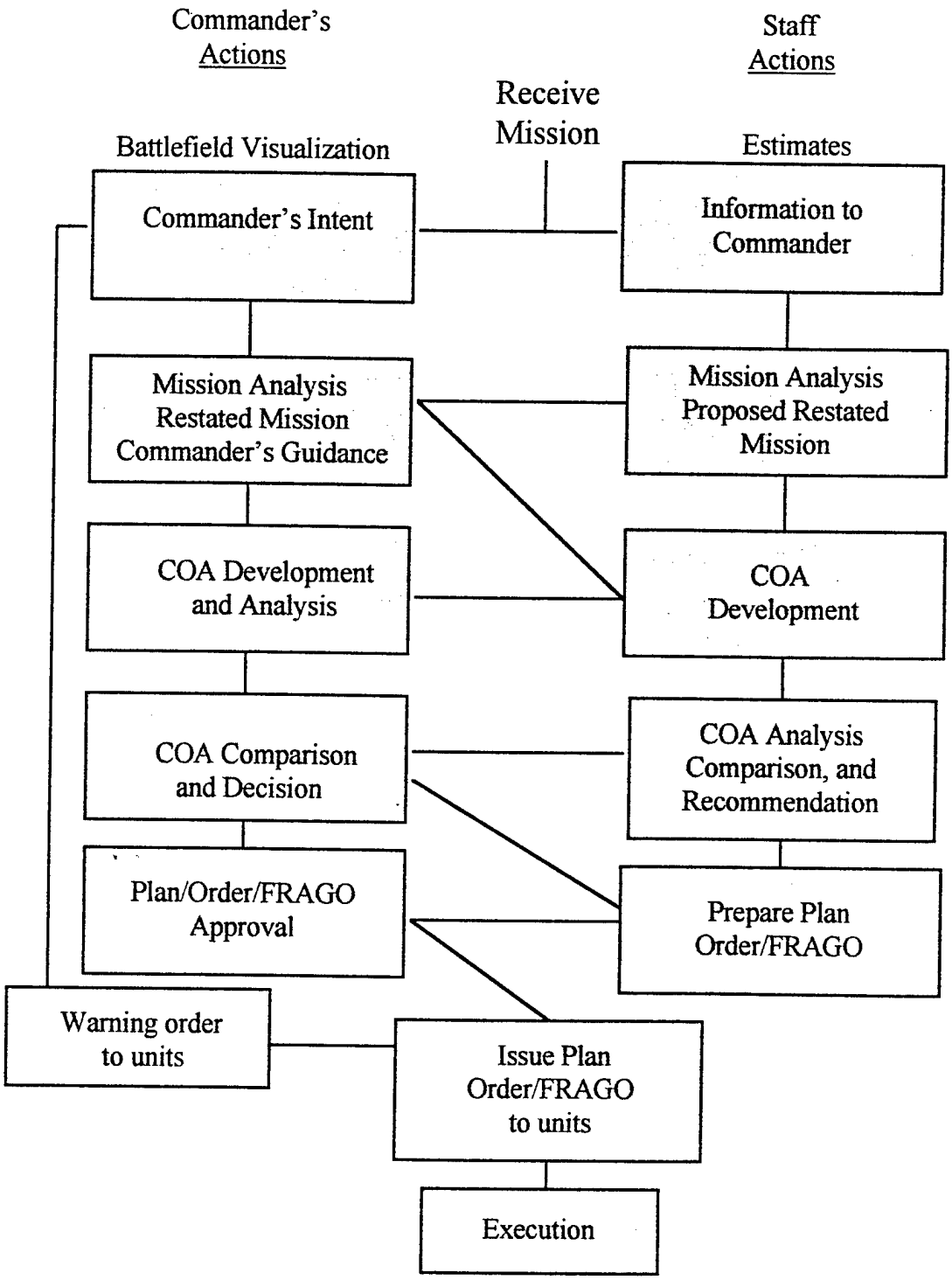
only mission is to defeat the rotational unit. The OPFOR uses divisional, regimental, and battalion reconnaissance assets to gain local information dominance over the rotational unit. The rotational unit has neither divisional or regimental cavalry units, nor does it routinely have access to the vast intelligence resources available from echelons above division. A result of this is rotating units assigning missions to organic scout platoons requiring them to perform some missions normally associated with cavalry organizations. The results are predictable and will continue until a better training solution is devised.

The NTC is a reasonably accurate test of a units combat potential. Units have historically rotated there and improved their performance. Unfortunately, many units are continuing to run blindly through the desert, and would run blindly into the enemy in a real war. The doctrinal and training recommendations offered in this monograph were designed to stop units from running blind in the desert, and must be adopted because the NTC is only a simulation of the horrors of real war.

APPENDIX 1: RESEARCH DATA

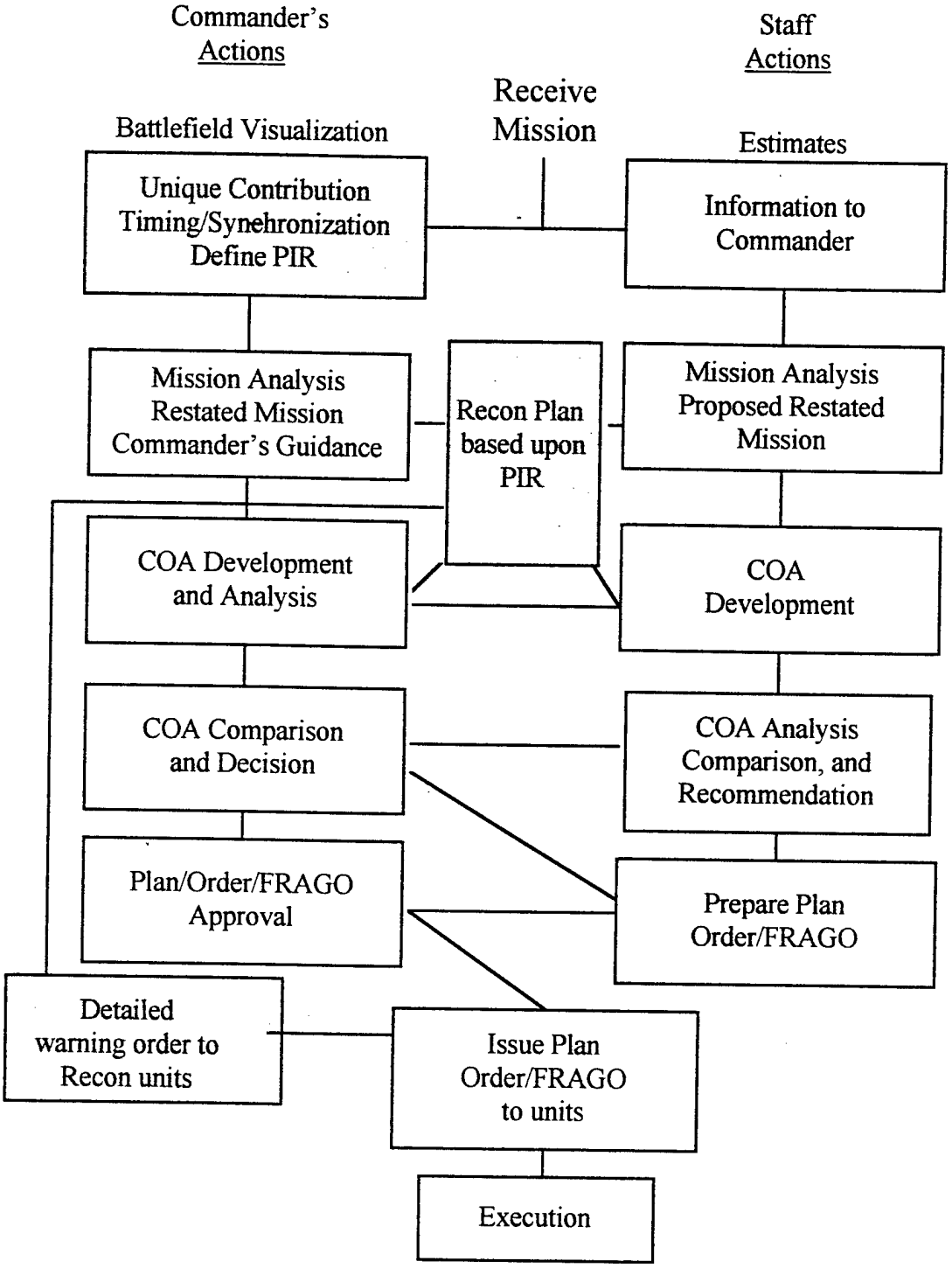
Rotation	Training Day	Mission	Mission Success	Recon Success	Recon Unclear
95-04	1	DATK	NO	NO	
	5	DATK	NO	NO	
	13	MTC	NO	NO	
	14	MTC	NO	YES	
95-05	1	MTC	NO	NO	
	5	DATK	NO	NO	
	13	DATK	NO	NO	
	14	DATK	NO		YES
95-06	5	DATK	NO	NO	
	8	MTC	NO	NO	
	13	DATK	NO	NO	
	14	DATK	NO	YES	
95-07	8	MTC	NO		YES
	11	DATK	NO	NO	
	13	DATK	YES	NO	
95-08	1	DATK	NO		YES
	5	DATK	NO	NO	
	7	DATK	NO	NO	
	11	DATK	NO		YES
95-10	9	DATK	NO	NO	
	11	DATK	YES	YES	
	13	MTC	NO	NO	
96-01	1	MTC	NO	NO	
	4	DATK	NO	NO	
	5	DATK	NO	YES	
	13	DATK	YES	YES	
96-02	6	DATK	NO	NO	
	8	DATK	NO	NO	
96-03	9	DATK	NO		YES
	10	DATK	NO	NO	
	14	MTC	NO	NO	
96-04	8	MTC	NO	NO	
	12	DATK	NO	NO	
	14	DATK	NO	YES	
96-05	1	DATK	NO	NO	
	3	MTC	NO	NO	
	7	DATK	YES	YES	
96-06	2	DATK	NO	NO	
	7	MTC	NO	NO	
	13	DATK	NO	NO	
Totals		40	4	7	5
		DATK: 29 MTC: 11	DATK: 4 MTC: 0	DATK: 6 MTC: 1	DATK: 4 MTC: 1

APPENDIX 2: CURRENT DOCTRINE



Source: ST 101-5

APPENDIX 3: PROPOSED CHANGES



ENDNOTES

[1] LTC(R) Tony Bowers, Military Analysts, Cubic Applications Group (JANUS), Fort Leavenworth, Kansas. Interview by author 27 August 1996. LTC Bowers firmly believed that he should have personally trained his scout platoon rather than allowing the battalion S-3 or any other officer to train that unit. Additionally, he stated that the M1 transition training had been his top priority, and in retrospect should have implemented a detailed scout training plan before the rotation.

[2] U.S. Army, *Field Manual 17-95, Cavalry Operations*, (Washington D.C. : Department of the Army, September 91), 5-6.

[3] Martin Goldsmith, *Applying the National Training Center Experience: Tactical Reconnaissance.*, (Santa Monaco, CA: Rand Corporation, 1987), 67.

[4] Ibid., 68-69.

[5] Stephen C. Duncan, *Seven Years After-Has Task Force Ground Reconnaissance Improved Since The Rand Study ?*, (Fort Leavenworth, Kansas: School of Advanced Military Studies, 1995), 24.

[6] Ibid., 33-41.

[7] U.S. Army, *Field Manual 71-3, The Armored and Mechanized Infantry Brigade*, (Washington D.C. : Department of the Army, January 1996), 2-5.

[8] U.S. Army, *Field Manual ARTEP 71-2-MTP, Mission Training Plan For the Tank and Mechanized Infantry Battalion Task Force*, (Washington D.C. : Department of the Army, October 1988), 5-111.

[9] U.S. Army, *Field Manual 101-5-1, Final Draft Operational Terms and Graphics*, (Washington D.C. : Department of the Army, July 1995), 1-227.

[10] Ibid., 1-240.

[11] U.S. Army, *Field Manual 101-5-1 Operational Terms and Graphics*, (Washington D.C.: Department of the Army, 1985), 1-64.

[12] Field Manual 71-3, pages 4-25.

[13] U.S. Army, Field Manual 71-2, *The Tank and Mechanized Infantry Battalion Task Force*, (Washington D.C. : Department of the Army, September 1988), 3-4.

[14] Ibid., 3-19 through 3-20.

[15] Field Manual FM 101-5-1, (Final Draft) page 1-254.

[16] U.S. Army, *Field Manual FM 71-123, Tactics and Techniques for Combined Arms Heavy Forces: Armored Brigade, Battalion/ Task Force, and Company/ Team,* (Washington D.C. : Department of the Army, September 1992), 2-49.

[17] Ibid., 2-49 through 2-52.

[18] As a Brigade commander during Prairie Warrior 96 we had enormous success by using a dedicated tank heavy team following behind the battalion scout platoons. When the scouts were able to identify enemy defensive screens this unit would overwhelm the screen leaving the enemy blind and confused. General Frederick Franks, who was the commander of the U.S. 7th Corps during Operation Dessert Storm, and I had a lengthy discussion about this subject and he fully concurred with the technique as long as the effort was synchronized and logistically supportable.

[19] U.S. Army, *Field Manual 34-2-1, Tactics, Techniques, and Procedures for Reconnaissance and Surveillance and Intelligence Support to Counterreconnaissance,* (Washington D.C. : Department of the Army, June 1991), 1-1.

[20] Ibid., 9-1 through 9-3 for offense, while 10-1 through 10-11 are counterreconnaissance.

[21] U.S. Army, *Field Manual 34-130, Intelligence Preparation of the Battlefield,* (Washington D.C. : Department of the Army, July 1994), Chapter 2.

[22] U.S. Army, Center for Army Lessons Learned, *Abbreviated Planning* (Fort Leavenworth, Kansas, : Department of the Army, December 1995), II-7 through III-12.

[23] U.S. Army, *Field Manual ARTEP 71-3-MTP, Mission Training Plan for the Heavy Brigade Command Group and Staff,* (Washington D.C. : Department of the Army, October 1988), 5-86.

[24] Ibid., 5-40 through 5-41.

[25] U.S. Army, *Field Manual ARTEP 71-3-MTP Initial Draft Mission Training Plan for the Heavy Brigade Command Group and Staff,* (Washington D.C. : Department of the Army, March 1996). The newer version, which is broken down by BOS, fixes responsibility of the command and control BOS to numerous individual positions within the TOC. The Brigade S3 section may not have direct responsibility for all of these tasks, but will certainly have access to those who work within the TOC who have that responsibility; therefore, their numbers are included in the additional S3 section tasks.

[26] Ibid., 5-9 through 5-12 as an example of staff coordination on reconnaissance.

[27] U.S. Army, *TRADOC Pamphlet 350-16, Heavy Opposing Force Tactical Handbook,* (Washington D.C. : Department of the Army, 15 September 1994), 4-1 through 4-3.

[28] Ibid., 4-4 and 4-5.

[29] LTC Baggot, former NTC OPFOR Motorized Rifle Regiment commander, class on OPFOR tactics and doctrine to AMSP (SAMS), 15 August 96.

[30] *Field Manual 17-95, Cavalry Operations*, September 1991, page 4-3 does list the fundamentals of reconnaissance, as does *FM 17-98 The Scout Platoon* and a few other doctrinal manuals. These are specialized tactical manuals for reconnaissance specific units as opposed to the 71 series of common combat arms tactical manuals.

[31] The Center For Army Lessons Learned (CALL) maintains a comprehensive database of rotational unit Take Home Packages. The author obtained the THP's by going to CALL and copying the disk in July 1996. CALL does have a home page available for those with the appropriate access. It is CALL HP:http://call.army.mil:1100/call.html. This monograph does not list the unit, but refers instead to the rotation number and the training day that the action or incident occurred. If an individual desires to replicate this study, refer to the armor task force, rotation number, and to the training day the incident occurred.

[32] Goldsmith, (Rand) pages 7-8.

[33] Duncan, page 22.

[34] Goldsmith (Rand) pages 7-12. The 1987 Rand study used a combination of THP's, taped records of the battles, and field data from serving Observer/Controllers to obtain a data set consisting of 17 rotations (NTC 85-14 through 86-10) and 113 force on force battles. The methodology used was first to subjectively determine offensive mission success or failure. The criteria for offensive success was: "the defender should be reduced to ineffectiveness, while the attacker retains coherent combat power." (p 7) To determine this they used primarily the THP, but augmented their results with other data sources. To determine the reconnaissance success rate they again used the THP as the primary source. The methodology used was to determine reconnaissance success or failure from the THP, and then reference this against comments from the observer/controllers and the taped records of the battle.(p 5-7) They also studied OPFOR reconnaissance methods, the training of key reconnaissance players, equipping the scout platoon, and a fairly extensive review of doctrine. Duncan in his 1994 monograph studied NTC rotations 93-09 through 94-07 encompassing 65 offensive missions using

the THP as his only source. His criteria for determining offensive mission success was based upon the THP. He also noted that the THP normally stated the battle outcome in very clear terms. (p 23) He then subjectively judged the success of the reconnaissance missions based upon the quality of IPB, the quality of the task force reconnaissance and surveillance plan, and the quality of the overall task force plan.(p 29-31). My methodology was a systematic attempt to determine whether or not the reconnaissance mission was a success or a failure. The methodology is subjective, but I believe it to be the most effective way of studying a THP.

[35] Horizontal BOS integration is examining all the BOS at the Task Force level and attempting to gain insight into what occurred or did not occur during the battle. For example during NTC rotation 96-03, Training day 10 the rotational unit conducted a force on force deliberate attack. I reviewed all the BOS specific comments and then compared the strengths and weaknesses of the maneuver BOS with the strengths and weakness of the intelligence BOS. For the vertical integration I then looked at the Brigade THP and compared the intelligence BOS strengths and weaknesses with the Task Force's strengths and weaknesses. This was an attempt to examine systematic problems within the Brigade, and to identify and isolate trends.

[36] The five reconnaissance missions marked as unclear or uncertain are listed in appendix 1.

[37] CALL NTC THP database, NTC rotation 95-07, training day 13, brigade deliberate attack mission.

[38] CALL NTC THP database, NTC rotation 95-10.

[39] The Center For Army Lessons Learned produces a quarterly document called *CTC Trends.* The author reviewed those produced for 4th Quarter FY 94, and 1st through 4th Quarter FY 95. Each document noted problem areas in TOC information management and dissemination. Additionally CALL produced *Newsletter 95-7* in May 1995 which deals directly with techniques of solving the problem of information management and dissemination within the TOC.

[40] U.S. Army, Command and General Staff College Student Text 101-5 *Command and Staff Decision Processes* (Fort Leavenworth, Kansas : Department of the Army, February 1996), Pages 1-7 through 1-10 explain CCIR and PIR as they relate to visualizing the battle. The CCIR and PIR comments noted in the THP's were extremely helpful in identifying trends.

[41] Student Text 101-5 is the primary source on the decision making process. Chapter 1 describes the tactical decisionmaking process. The remaining chapters describe the process in detail. This document is a U.S. Army doctrinal source as it is used in the

training of officers in Army schools, and it is used by TOE units in the field executing real world missions. It is due to be superseded by FM 101-5 *Staff Organization and Operations* which is currently in its final draft version. The reconnaissance shortcomings noted in the Student Text will be in the new Field Manual unless changes are incorporated.

[42] Field Manual 34-2-1 provides the best description of PIR and its relationship to the collection management process. Page 1-3 of this manual states that PIR is normally stated as a question, and that PIR is the reason that all collection and Reconnaissance and Surveillance plans exist.

[43] Student Text 101-5 describes the tactical decisionmaking process. It places primary emphasis upon the staff's development of the plan, but also states that the commander uses his personal estimate as a cross-check of his staff's estimates.(p 1-4) The commander develops his estimate prior to receiving the mission analysis brief from his staff. He then issues his planning guidance to the staff. The commanders guidance to the staff currently consist of nine major areas, and covers areas ranging from the enemy course of action to focus on, to the type of rehearsal to conduct.(p 2-5) Although the guidance in the manual does include reconnaissance and security in the concept of the operation it does not contain a specific reference to PIR. (p 2-4 through 2-14).

[44] Student Text 101-5 must be the primary doctrinal publication conveying this change. ST 101-5 is the doctrinal source taught throughout Training and Doctrine Command, and reaches a mass audience of future commanders. Other manuals such as FM 71-2 and FM 71-3 must also incorporate this change.

[45] Student Text 101-5 states that the Chief of Staff/ Executive Officer is foremost a warfighting plans integrator who has specific responsibility for a number of items including managing the Commander's Critical Information Requirements or CCIR. (p 1-17). CCIR consist of three major areas: they are PIR, Essential Elements of Friendly Information (EEFI) which is that information needed to protect the force from the enemy's information gathering systems, and Friendly Forces Information Requirements (FFIR) which is information about the capabilities of friendly units. It also states that the Chief of Staff/ Executive Officer has three primary responsibilities including time planning, staff integration, and combat information management. (p 1-19).

[46] Specifically, the capabilities and limitations of the HMMWV mounted scout need to be listed in FM 71-2, chapter 2 which consists of task force command and control, and in chapter 3 which is offensive operations. They must also be listed in FM 71-3 chapter 4, offensive operations.

[47] Interview by author with LTC Tony Bowers, Military Analysts, Cubic Applications Group (JANUS). Interview conducted 14 November 1996. The JANUS system is not as

realistic as a TOC, but it does have the capacity to challenge a staff on combat information management.

[48] Kevin Kelly, *Out of Control* (Reading, Massachusetts : Addison-Wesley Publishing Company, 1994). 244-248. Kelly describes the training value of SIMNET and its future potential. Additionally, the author served as a Small Group Instructor at the Armor Officer Advanced Course for over two years and has trained extensively with the SIMNET system. The SIMNET facility at Fort Knox, Kentucky constantly trains both active and reserve armor battalions from throughout the United States. Task force level training is possible by tethering vehicles to leader vehicles thus allowing for complex tactical problems to be simulated in the facility.

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