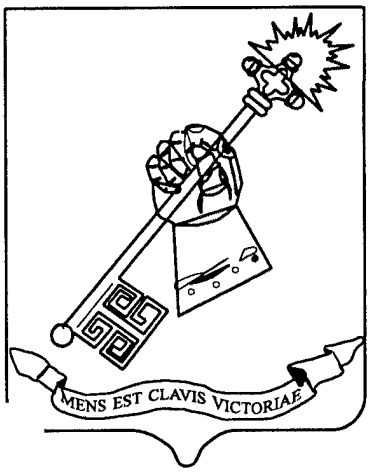
CAN SYSTEMS THINKING BE USED TO ENHANCE BATTALION TASK FORCE RECONNAISSANCE AT THE NATIONAL TRAINING CENTER?

A Monograph
By
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Aviation



19960617 052

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First Term AY 95-96

Approved for Public Release; Distribution is Unlimited

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
		MONOGRAPH

4. TITLE AND SUBTITLE
Can Systems Thinking be used to Enhance Battalion Task Force Reconnaissance at the National Training Center? (U)

5. FUNDING NUMBERS

6. AUTHOR(S)
MAJ Michael W. Drumm, USA

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
School of Advanced Military Studies
Command and General Staff College
Fort Leavenworth, Kansas 66027

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Command and General Staff College
Fort Leavenworth, Kansas 66027

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
DISTRIBUTION UNLIMITED

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

SEE ATTACHED

14. SUBJECT TERMS
RECONNAISANCE, NTC, BATTALION SCOUTS, SYSTEMS THINKING, SCOUT PLATOON, Rand SPLAN

15. NUMBER OF PAGES
53

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNLIMITED

DTIC QUALITY INSPECTED 1

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

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Title of Monograph: Can Systems Thinking be Used to Enhance Battalion Task Force Reconnaissance at the National Training Center?

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Accepted this 14th day of December 1995

ABSTRACT

CAN SYSTEMS THINKING BE USED TO ENHANCE BATTALION TASK FORCE RECONNAISSANCE AT THE NATIONAL TRAINING CENTER?

Reconnaissance performance by battalion task forces rotating through the National Training Center, is generally ineffective and frequently results in the task force's defeat during offensive operations. In the vast majority of battles, the decisive combat between the rotating battalion task forces and the Opposing Forces, is preceded by a reconnaissance battle that battalions lose about seventy-two percent of the time. This monograph examines the continuing problem of ineffective battalion task force reconnaissance at the National Training Center, and the consequences of that ineffectiveness.

An examination of U.S. Army doctrine for conducting battalion task force reconnaissance is undertaken, and a description made of the interrelated components of a battalion task force reconnaissance system. Responsibilities of key personnel in the reconnaissance process are established, and the doctrinal importance of organic scout platoons to the reconnaissance effort confirmed. The monograph reviews the results of three studies which establish positive correlations of eighty to ninety percent, between successful reconnaissance and successful offensive operations. A review of findings from a 1986 RAND Study, a study by the Center for Army Lessons Learned (CALL), and the results of more recent battalion task force reconnaissance evaluations is presented, with no indication of significant improvement to reconnaissance performance over the past decade. Development of a Reconnaissance and Surveillance plan, and early deployment of task force scouts, are shown to be critical events in the battalion task force reconnaissance process, and those specific components of the problem are examined in greater detail using systems theory.

Battalion task force reconnaissance failure, is portrayed as a "failure to learn", and compared with a case study described by Eliot A. Cohen and John Gooch in their book, Military Misfortunes. That failure is then shown to be a complex problem, requiring a systems thinking approach to develop a solution, rather than traditional, reductionist methods. A systems model is presented demonstrating the cyclic nature of the recurring battalion task force reconnaissance problem, based on John R. Boyd's, Observe, Orient, Decide, and Act (OODA) loop. Finally, a recommendation is presented that addresses the need for altering what Peter M. Senge describes as individual and institutional mental models, and for restructuring the operational as well as reconnaissance planning processes.

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I. Introduction

The commanders and staffs of a heavy brigade and three battalion task forces filled the silent room. No one bothered to make conversation. The grim faced audience, covered with powdery yellow sand, focused their whole attention on the full colonel who was about to speak. "Good morning gentlemen. I'm the Operations Group Commander for the National Training Center. We're here to discuss the events of the past two weeks and lead you in a discussion of your performance." The 2-43rd Battalion Task Force S2's mind kept slipping back to two days ago, and the events leading up to the simulated carnage yesterday.

"Sir, we've just heard from a dismounted scout team moving along the south wall of the central corridor. They think they have found the main obstacle belt and they've sent us the location. It is not the same location we received from brigade." The S2 seemed delighted that something, anything, was working, even if it was not part of the plan. But then what plan was he thinking of? The Reconnaissance and Surveillance plan he had developed in back of the Sergeant Major's HMMWV just before the scouts headed out last night could hardly be called "precise guidance"[1] nor was it especially timely. The operations plan put together by the S3 did not exactly address reconnaissance, that was the S2's job. Never mind that the Military Intelligence Officer Advance Course spent 3 full hours teaching future S2s how to complete an R & S plan, and less time than that on what to tell the Scout Platoon Leader to look for and when to report it.[2] So, as long as somebody saw something and told someone else about it, the "plan" must be working, right?

The S3, intently reading the new FRAGO from brigade, just nodded and said, "Terrific. When does the sun come up?" "In about two hours, sir." "OK, make sure you log the message and then start a new pot of coffee." As the S2 considered the S3's apparent lack of interest in the location of an obstacle belt, he dutifully logged the scout team's report and started a new pot of black death. Of course the scout team could be wrong. They were not able to hear him over the radio because they had moved beyond range now and there was no plan to establish a radio relay. It is pitch black out there, and since there had not been time to augment the scout platoon for this mission with a COLT team, with it's night vision and target designation capabilities, how could they be sure of anything they saw? There was no way to communicate with anyone who could confirm or deny exactly where the obstacle belt was, so it was probably better to go with the brigade's information.

As the after action review (AAR) continued, the OPS Group Commander reviewed a chronology of the failed attack. A terrible realization pierced the young S2's sleep deprived mind. The scouts had been right. The obstacle belt was 1000 meters further from the Line of Departure (LD) than brigade had said. The artillery generated smoke screen fell well short of the obstacle belt and provided no concealment at all from the voluminous amount of OPFOR direct fire systems overwatching the obstacle. The breach, although initially successful, was permitted by the OPFOR to lure both lead and following task forces into piecemealing their attacks. Two thirds of the brigade fed the well developed firesacks. The result was the 20 acre parking lot of destroyed vehicles now on the video screen. It was just another day at the NTC.

The battalion task forces that rotate through the National Training Center (NTC)[3] year after year, struggle valiantly to defeat what appears to be a nearly invincible foe. Poor tactical reconnaissance is frequently cited as one cause of failure in studies prepared by the U.S. Army, by contractors working for the military such as the RAND Corporation, and by students of the military arts and sciences. These studies emphasize that poor tactical reconnaissance significantly contributes to the failure of battalion task force offensive operations at the NTC[4]. Winning the initial reconnaissance battle is crucial because of the tremendous advantage it gives to one side. Successful reconnaissance provides detailed information on the specific size, location, and activity of enemy units and it can be analyzed to determine the enemy's most probable course of action. As the U.S. Army's key operations doctrine states: "Successful reconnaissance normally precedes successful operations at all levels."[5]

This monograph assesses why battalion task force reconnaissance in general, and why scout platoons in particular, fail at the NTC. It examines current U.S. Army doctrine to establish a basis of performance, and it validates where responsibility currently lies for planning and execution of the reconnaissance mission. The monograph then reviews present literature, periodicals, and professional publications, including documents from the Center for Army Lessons Learned and Take Home Packages from the NTC, to identify the difference between how reconnaissance planning and execution should be done, and what actually happens. Finally, the monograph provides a brief explanation of systems theory and develops its applicability to the battalion reconnaissance system.

II. Battalion Task Force Reconnaissance Operations

The Army capstone doctrinal manual, FM 100-5, Operations, states,

> Successful reconnaissance normally precedes successful operations at all levels...Reconnaissance is a precursor to fire and maneuver. Reconnaissance elements maintain contact with the enemy, develop the situation, and forewarn maneuver units prior to initial engagement. .. successful and continuous reconnaissance by a variety of tactical, operational, and strategic means is vital for the success of offensive operations.[6]

Subordinate Army field manuals support the importance of reconnaissance prescribed in FM 100-5 and describe in greater detail why it is important at all levels. FM 71-100, Division Operations, states that "Reconnaissance operations provide information on the terrain and enemy...Reconnaissance verifies or refutes analyzed information..."[7] At the division level, reconnaissance is so important that a battalion sized Cavalry Squadron is organized, equipped, and continuously trained to perform it. FM 71-100 further states that "Reconnaissance provides fresh information on terrain to reduce unknowns and facilitate the rapid execution of the main or supporting attack."[8] At all levels, "Without effective R&S (Reconnaissance and Surveillance), the unit blunders into defending enemy units or is surprised by an attacker. Either situation makes battlefield success unlikely."[9]

Within the echelons above the battalion task force are essential parts of the battalion reconnaissance and intelligence systems. Each echelon's intelligence and reconnaissance processes overlap and compliment the others. The redundancy and intelligence verification that comes with multiple sources, is designed to ensure that timely and accurate information about the enemy gets to the commander. The primary

responsibility for intelligence and reconnaissance at all levels lies with the G2/S2.

Division

The Division G2 has staff responsibility for division reconnaissance. "He assigns reconnaissance tasks to subordinate commanders through the collection plan based on their assigned mission."[10] The Division G2 develops a collection plan that tasks units within the division to answer priority intelligence requirements. "Commanders get directly involved in deciding priorities of reconnaissance and intelligence operations."[11] Priority Intelligence Requirements flow to all subordinate organizations within the division and become an integral part of each subordinate brigade and battalion's intelligence collection and reconnaissance effort. This system of tasking ensures a layered collection effort, increases the reliability of intelligence analysis, and improves the likelihood of collecting what is required. "Our system is based upon complementary ground, aerial, and technical assets and is important in all the battlefield operating systems (BOSs). All provide information to meet the commander's requirements."[12]

The division's role in the battalion task force reconnaissance system is as a source of intelligence, routed through the brigade, from echelons above and within the division. The division accepts requests for intelligence from the brigades which consolidate the requests from the battalions. The division also provides direct intelligence support by attaching to the brigade, intelligence and combat systems such as ground surveillance radars (GSRs),combat observation/lasing teams (COLTS), and engineers. These may in turn be attached to battalion task forces for inclusion in the task organization of scout platoons to assist in the performance of their reconnaissance mission for the battalion.

Brigade

Heavy brigades are organized to perform tactical tasks under the command of a division or corps headquarters. While "the divisional heavy brigade has no dedicated organic reconnaissance unit, many intelligence resources are available to the brigade."[13] The brigade commander provides the brigade S2 with guidance including priority intelligence requirements (PIRs). The Brigade S2 develops a collection plan to answer the commander's PIR that relies upon information and reports from higher and lower units.

> Our doctrine states that a brigade normally does not act independently, but serves as a part of a division or corps. This forces the brigade to rely on the division G2, the direct support military intelligence company, the cavalry squadron, subordinate maneuver battalions, and other attached or adjacent units for reconnaissance and security.[14]

The brigade role in the battalion task force reconnaissance system is primarily as a communications channel, sending intelligence that it has received from higher echelons and intelligence it has produced through its own analysis, to the battalion and receiving requests for intelligence from the battalion. The brigade may also elect to provide the battalion with assets given to it by the division to facilitate the battalion reconnaissance effort. Generally, the battalion/task force scout platoon receives taskings that reflect the battalion commander's priority intelligence requirements (PIRs), and a consolidation of the PIRs from echelons above. If the brigade commander thinks it is necessary, he may assume direct control of the scout platoon in one or more of his subordinate battalion task forces. This is not usually done as it seriously curtails the battalion's reconnaissance

effort and requires the dedication of brigade staff personnel to direct the scout platoon.

Battalion/Task Force

Within the battalion, while reconnaissance is continually performed, it seldom continuously covers any particular target because of the small number of reconnaissance assets available. The primary means for the battalion to conduct reconnaissance is with the battalion task force scout platoon. "The battalion scout platoon performs reconnaissance, provides limited security, and assists in controlling movement of the battalion task force."[15] Although the scout platoon is the primary reconnaissance asset, all elements of the battalion are responsible for performing reconnaissance tasks within their capabilities and contributing to the entire battalion task force reconnaissance effort. When the requirement for intelligence collection exceeds the capabilities of the scout platoon and the other battalion task force elements, the S2 must request through the S3, assistance from higher headquarters.

Battalion task force reconnaissance begins as soon as possible after the battalion receives its mission. During offensive operations, it is planned with the intention of providing the commander and staff with information on enemy positions, the locations of obstacles, and the conditions of routes anticipated for use by the battalion in the attack. "Reconnaissance and surveillance operations are planned by the S2 and coordinated with the S3..."[16] The working relationship between the S2 and the S3 can determine the success or failure of reconnaissance planning and execution.

Scout Platoon

The primary missions of the scout platoon are reconnaissance and security for the

battalion task force.[17] The scout platoon performs its missions from vehicles or on foot, in daylight or at night, and in all weather conditions. FM 17-98 delineates additional missions for the scout platoon, but its value as a reconnaissance asset is paramount.[18]

Reconnaissance by the scout platoon is performed for the duration of the attack, and it can continue after a successful attack in anticipation of a follow-on threat or mission. "The success or failure of the scout platoon often results in the success or failure of the main force."[19] The scout platoon conducts reconnaissance missions as a part of a larger combined arms force and depends upon its parent unit for combat support and combat service support. The scout platoon's limitations include restrictions on the size of the area it can reconnoiter, the speed with which it can move, and the amount of time it can sustain itself.[20] While the Scout Platoon Leader leads the platoon in the execution of it's reconnaissance mission, the Battalion Task Force Commander, S3, and S2 have essential tasks to perform and share responsibility for the success of the mission, and the success of the reconnaissance system.

Responsibilities

Battalion Task Force S2

The battalion task force S2 is responsible for providing the commander with the intelligence he needs to make timely, well informed decisions. An integral part of that intelligence process is collection management. The asset most responsive to the S2's collection needs is the organic scout platoon. While the S2 cannot task the scout platoon, the S3 is delegated that authority, as the battalion task force collection manager the S2 is responsible for coordinating their best use with the S3 through the Reconnaissance and

Surveillance (R&S) plan. "An R&S plan identifies which specific assets will be tasked to collect information, and how they will do it."[21] The R&S plan differs from the collection plan created by intelligence personnel at all levels in that the R&S plan identifies specific assets to be tasked for collecting information. Collection plans identify which units or agencies will collect information. As a result, R&S plans are usually generated by S2s at the brigade and battalion levels only.

The S2 is also responsible for ensuring that reconnaissance assets, and in particular the scout platoon, receive the most up to date intelligence possible concerning the enemy situation, terrain and weather. The S2 requirement to update the scout platoon during their execution of the reconnaissance mission is vital to scout platoon survival, and ensuring their ability to continue the mission. During mission preparation, the S2's instructions must be detailed, precise, and must focus the scout platoon's reconnaissance effort so that the few assets available are not over tasked or under utilized.

Battalion Task Force S3

The battalion task force S3 is responsible for ensuring that the R&S plan is integrated into the overall operational plan. His role involves coordinating all battlefield operating systems (BOSs) to support the operational plan with the goal of massing all required combat power at the decisive place and time. Many of the same BOSs are essential to the success of the scout platoon's reconnaissance mission and their incorporation into the R&S plan should be considered during the planning process. Augmentations to the scout platoon such as engineer, air defense artillery, communications, maneuver, intelligence, and fire support assets can provide additional

scout platoon force protection and expertise in the collection of intelligence. Engineers attached to the scout platoon can provide expert assessments of routes during route reconnaissance or evaluations of obstacles that will require breaching during an offensive operation. The attachment of a Stinger Team can provide additional force protection if the platoon is discovered by enemy aerial counterreconnaissance assets. Likewise, the attachment of an artillery forward observer adds expertise if potential high payoff targets are discovered, or if elements of the scout platoon are discovered and require fire support in order to break contact and continue the mission elsewhere.

Until the fielding of advanced intelligence collection and dissemination systems to the battalion task force. the battalion reconnaissance system is the most responsive method for gaining the timely intelligence about the enemy, the weather, and the terrain. The S3 is essential to the battalion reconnaissance system because he possesses the authority to task the components of the system and ensure their compliance with the R&S plan. Without his support the S2's plan will not be executed.

Commander

The commander's roll is to direct the Intelligence and Electronic Warfare (IEW) effort to meet mission requirements. [22] By stating his PIRs, targeting priorities, and priorities for other types of intelligence support such as early indications and warning, Battle Damage Assessment (BDA), and force protection, the commander focuses the intelligence effort and therefore the reconnaissance effort. The commander provides the S2 with his priority intelligence requirements (PIR), but on some occasions the S2 may develop the PIR for the commander's approval. In either case, the S2 generates a

collection plan and an R&S plan based in part on the commander's guidance.

Scout Platoon Leader

"The scout platoon leader is responsible to the commander for the discipline, combat readiness, and training of the platoon as well as the maintenance of its equipment."[23] The platoon leader must be expert at all of the skills required to conduct effective reconnaissance and he must be proficient in the tactical employment of the platoon. He works closely with the S2 and S3, providing his expertise throughout the R&S and operational planning process. Most importantly, the scout platoon leader must have a thorough understanding of the commander's intent so that as the tactical situation changes, he may adjust and exercise his good judgement to ensure completion of the reconnaissance mission.

The scout platoon leader obtains the required guidance from the battalion operations order, but time is critical to the scout platoon's survival. The amount of time available for execution of the reconnaissance mission has a direct impact on how well the scouts can avoid engagement by the enemy, so the scout platoon leader may not wait for the publication of a formal order. Instead, the platoon leader frequently tasks a scout section or squad leader to gather essential elements of information (EEI) including the situational template, and the commander's intent, while the scout platoon leader does mission planning. The subordinate leader may also obtain a written description or graphic of the primary axis of advance, a copy of the fire support plan/overlay, and a list of the schedule and priority of fires to ensure that the scouts will not be operating in a preplanned fire support target area without coordination. To ensure adequate support of

the platoon during the mission, the scout squad or section leader also obtains the location of combat trains and aid stations, copies of the current signal operating instructions (SOI), the air defense artillery (ADA) treat warning level, and the military operations protective posture (MOPP) level[24]. Many times, however, not all of these documents are completed or available before the platoon must move forward to begin its mission. Some of the required information can be and is passed to the scouts over the operations and intelligence (O&I) radio net after the platoon has departed. How quickly and how well the scout platoon leader gathers the information he needs for planning, and coordinates preparation for the mission, has a direct impact on the platoon's success.

The body of doctrine contained in the Field Manuals and official U.S. Army publications provide detailed tactics, techniques, and procedures for planning and executing the tactical reconnaissance mission. However, there is not one capstone document that incorporates all of the elements described, or that addresses the reconnaissance process as a system.

> So even if the conduct of a battle can be reviewed in terms of operating systems, it is not possible to refer to a single manual when analyzing the intelligence function. Instead we find that several manuals, written for disparate users, must be employed. Perhaps we should not be surprised that integration and coordination prove difficult.[25]

The organizations involved in the process overlap, and in many instances provide a desired level of redundancy to the intelligence collection process. This redundancy, however, can be inefficient by tying up scarce reconnaissance resources through unplanned duplication, and permitting gaps in intelligence coverage through poor

synchronization.

The doctrine as currently written, makes everyone and no one responsible for reconnaissance as performed by the scout platoon. Current doctrine divides the responsibilities for the performance of the scout platoon among five individuals. The commander, by virtue of his position, is responsible for all activities within his command. He cannot oversee all aspects of every operation and delegates certain supervisory responsibilities to his staff. FM 34-8 makes the commander responsible for focusing intelligence (reconnaissance); "... give the S2 instructions about aspects of the enemy that you are most concerned about."[26] Commanders must decide what they need to know for the operation to succeed including establishing clear priorities for intelligence and targets.

The battalion S3 tasks subordinate units with reconnaissance missions in the battalion operations order based upon the commander's guidance and input from the S2. Though the S2 is responsible for developing an R&S plan to conduct reconnaissance, based upon the commander's PIR and the operational plan, he must rely on the S3 for the authority to actually execute it. Determining exactly who the scout platoon leader works for is more complicated.

The scout platoon leader is tasked to perform reconnaissance by the S3, but works closely with and assists the S2 during development of the R&S plan. Execution of the reconnaissance mission and the actions of the scout platoon leader are supervised by the S2, not the S3. However, the scout platoon leader's performance as an officer and leader is evaluated by the battalion headquarters and services company (HSC) commander.

Responsibility for ensuring that the scout platoon is adequately supported also falls to the battalion's headquarters and services company commander, but his authority to task the scout platoon is restricted by the battalion task force's mission requirements, as determined by the S3. The confusion and tasking conflicts that can occur due to the lack of one individual with the responsibility and the authority to plan, coordinate, and execute reconnaissance, further complicates an already convoluted process. The determination and conscientious efforts of many competent and motivated soldiers and officers may still result in reconnaissance failure.

III. Trends in Battalion Task Force Reconnaissance Performance at the NTC

The RAND Study

In 1986, the RAND Corporation undertook at the U.S. Army's request, a study to determine if a correlation existed between successful reconnaissance and successful offensive operations.[27] The study was prompted by the published observations of former Army officials who identified serious shortcomings in the performance of the tactical reconnaissance mission at the NTC.[28] The recognition of a developing trend, frequently described in the After Action Reviews (AARs) and Take Home Packages (THPs) which summarized the results of each battalion task force's rotation through the NTC, verified that reconnaissance was a problem worthy of research.[29]

The study found that not only was there a strong correlation between effective reconnaissance and successful offensive operations, but that reconnaissance was more successful in deliberate attacks than in movements to contact and hasty attacks, and that offensive reconnaissance in general was poor.[30] The study concluded that battalion task

force reconnaissance lacked consistency. The cited causes were a failure of the scout platoon to avoid detection while scouting, a failure of the battalion to use other assets such as forward artillery observers to supplement the scouts, not maximizing the use of time, and a general lack of emphasis placed by commanders on the reconnaissance mission.[31] The RAND study's significance lies in its systematic methodology of identifying, quantifying, and analyzing the battalion task force reconnaissance problem. Table one shows the outcome of battalion task force attacks compared to the status of reconnaissance performed:

Table 1

		Battle Outcome		
Reconnaissance Status		Success	Failure	Standoff
Good	13	9	1	3
Poor	**50**	4	**38**	**8**
Unclear	14	4	4	6

1987 Battalion Task Force Attack Outcomes Based on Reconnaissance Status[32]

A reconnaissance status of good, poor, or unclear was awarded to the reconnaissance effort of a particular attack based upon a RAND study observer's evaluation of how well the unit performed the reconnaissance mission in compliance with current doctrine. In all cases corroboration of the evaluation was sought and obtained from a member of the NTC Operations Group, or the Opposing Force (OPFOR). The success of the subsequent attack was generally considered to include the placing of forces on the mission's terrain objective. "To be judged an offensive success, the defender should be reduced to combat ineffectiveness, while the attacker retains coherent

combat power. If both forces are reduced to combat ineffectiveness, the outcome is judged a standoff."[33] The data reveal that attacks were successful after poor reconnaissance only eight percent of the time while attacks after good reconnaissance were successful sixty-nine percent of the time. For all attacks, reconnaissance was measured as successful twenty-six percent of the time.

Substantial support for the hypothesis that successful offensive operations are positively correlated to successful reconnaissance also came from comparing opposing forces (OPFOR) data collected during the same study and shown in table two.

Table 2

Reconnaissance Results		Battle Outcomes: Success	Failure	Standoff
Good	**28**	**26**	**1**	**1**
Poor	5	0	5	0
Unclear	3	2	0	1

1987 OPFOR Attack Outcomes Based on Reconnaissance Status[34]

The data in table two not only shows how important reconnaissance is, but how critical it is to counter the enemy's reconnaissance. There are marked differences in the experience levels and doctrines of the opposing forces and the battalion task forces they face, but the ninety-three percent success rate of OPFOR attacks following successful reconnaissance lends further weight to the successful reconnaissance/successful attack hypothesis.

The RAND study also compiled data suggesting a strong correlation between the effective use of time and the success of reconnaissance.[35] Early dissemination of the

R&S plan by the battalion task force staff permitted the scouts time to rehearse, enabling them to perform their mission with more stealth. The better the scouts were able to minimize exposure to enemy observation and fires by moving along routes and using methods to avoid known enemy locations, the more likely they were to survive and perform their reconnaissance mission. Statistically however, battalion task force staffs were able to produce an R&S plan and disseminate it to the scouts only forty-two percent of the time before reconnaissance mission execution.

Time between missions at the NTC is intentionally restricted in order to simulate the contiuous combat operations of modern warfare. The reasons for the staff's late preparation of R&S plans may be attributed to task saturation of the S2, who is quickly analyzing the threat situation and providing input to the S3 for the development of the next operational plan. Likewise, the S3 is task saturated developing the operational plan and coordinating all battlefield operating systems. The R&S plan is viewed as secondary in importance to the other S2 and S3 tasks. When an R&S plan was produced and given to the scouts before they departed, there was sufficient time for the platoon to reherse the plan only nineteen percent of the time. The shortage of time for internal rehearsal and the short time available to perform all of the reconnaissance missions assigned, resulted in the scouts remaining mounted in their vehicles longer and moving more quickly and less cautiously into the enemy security zone. Scouts avoided contact with the enemy on only twenty-five percent of their missions.[36]

The reconnaissance method that minimizes risk of compromise best, is the establishment of observation posts (OPs). When properly constructed and concealed,

scouts may observe enemy activity without moving or being detected. Proper construction and camoflaging takes time, however, and only about thirty-three percent of the reconnaissance missions undertaken by scout platoons were able to establish OPs in time to help the commander focus combat power on the objective. Only six percent of the reconnaissance missions were able to provide intelligence beyond the objective.[37]

The RAND study concluded by citing what it judged to be shortfalls in doctrine, training, and equipment. According to the study, U.S. Army doctrine in 1986 did not identify reconnaissance as an essential factor nor did the field manuals contain sufficient specificity for the conduct of scouting and reconnaissance. Battalion task force staff personnel responsible for the planning and execution of reconnaissance, and the scouts themselves, did not have adequate experience or opportunity for individual training in reconnaissance skills. As a result, collective unit reconnaissance training suffered. Finally, scout platoon equipment did not meet the platoon's minimum requirements.[38]

The RAND study made recommendations in three areas: doctrine, training, and equipment. Recommended doctrinal changes included emphasizing the importance of reconnaissance in the conduct of the attack in doctrinal publications such as the draft version of FM 71-2J, elaboration on the use of assets other than the scout platoon to conduct reconnaissance, adding specificity to sections of doctrinal publications relating to IPB, and stressing the scout platoon's role in reconnaissance over other functions. Additionally the study recommended that, "While not strictly a matter of doctrine, add a textbook or handbook on reconnaissance to the training material available."[39] Training recommendations included development of a course for scout platoon leaders, and a

course for battalion S2s emphasizing battalion operations and the relation of reconnaissance and surveillance planning to the commander's needs.[40] According to the study, unit training methods should be developed supporting reconnaissance planning and execution for the guidance of battalion leaders, and increased attention should be given to the intelligence operating systems at the NTC.[41] Equipment change recommendations included switching from M3 Cavalry Fighting Vehicles to M2 Bradley Fighting Vehicles, and in non-modernized units, from Improved TOW Vehicles (ITVs) to M113s. The addition of wheeled vehicles, possibly the High Mobility Multi-Wheeled Vehicle (HMMWV), was recommended to add stealth and numbers. Additionally, each scout vehicle should be equipped with thermal viewers, binoculars, and night vision goggles, and each scout platoon with two sets of radio relay equipment and navigational and spotting equipment.[42]

In the period since the publication of the RAND study, many of the recommended changes were implemented. Emphasis is now placed upon the importance of reconnaissance in the appropriate war-fighting and intelligence field manuals. The 1994 revision of FM 17-98 Scout Platoon,, clarified the role of the scout platoon by giving emphasis to the reconnaissance mission and stealthy operations, and minimizing platoon combat operations when it is not augmented with combat forces.[43] Additionally, the publication of a new manual, FM 17-98-1 Scout Leader's Handbook, in September 1990, provided the members of the scout platoon with the tactics, techniques and procedures needed to accomplish their mission. Intelligence field manuals, such as FM 34-2-1 Reconnaissance and Surveillance and Intelligence Support to Counterreconnaissance,

which specifically cites the RAND study and was published in June 1991, FM 34-8 Combat Commander's Handbook on Intelligence published in September 1992, and FM 34-130 Intelligence Preparation of the Battlefield, revised in July 1994, gave emphasis to the reconnaissance effort that was not seen before the publication of the RAND study. There has not been an update, however, to FM 34-80 Brigade and Battalion Intelligence and Electronic Warfare, since 1986. This field manual describes how to produce reconnaissance and surveillance plans, but the RAND study found the detail and discussion of R&S plans lacking.[44]

Professional schooling for officers underwent changes, some of which apply directly to the reconnaissance problem. The Armor School added eighteen hours of instruction on reconnaissance to its Armor Officer Basic Course, and created a Scout Leader's Course. The Intelligence School at Fort Huachuca did not create an S2 specific school, but restructured the Intelligence Officer Basic and Intelligence Officer Advance Courses to give greater emphasis to support of tactical operations. However, only one, three hour block of instruction is conducted on how to perform reconnaissance and surveillance planning, and out of the hundreds of hours of total instruction, only occasional mention is made to how an S2 should instruct a scout platoon leader on what intelligence he should collect.[45] The lack of emphasis on ground reconnaissance by the intelligence school may be the result of the view that reconnaissance is a combat mission performed to collect intelligence, rather than an intelligence operation. That view places the responsiility for reconnaissance training and docrine on the combat arms. Changes made to training were a good start, but are still short of what is needed.

Equipment changes made to the scout platoon included the removal of all tracked vehicles (previously M113s and ITVs) and the fielding of ballistically protected HMMWVs. All scout platoons are also equipped with the newest generation of FM radio, SINCGARS, which provides improved range, reliability, an anti-jamming capability, and encryption. Each scout team within the scout platoon is equipped with thermal and image intensifying night vision devices as well as global positioning systems (GPS) and laser range finders. The change to HMMWVs from tracked vehicles possibly improved the stealthiness of the platoon but at the cost of trading away a higher level of force protection.

The U.S. Army made significant changes in the areas identified by the RAND study. Improvements in doctrine, training, and equipment should have all contributed to improvement in the battalion task force's execution of reconnaissance. Additional research verified much of what the RAND study described, but also indicated that reconnaissance planning and execution remained poor.

Center for Army Lessons Learned

In 1988, the Center for Army Lessons Learned (CALL) completed a study based upon the continuing collection of RAND type data for the year following completion of the RAND study. The CALL study compiled statistics indicating that battalion task forces were still conducting effective reconnaissance only about twenty-five percent of the time. The percentage of successful attacks following effective reconnaissance rose to eighty-three percent. Conversely, the percentage of attacks which failed following ineffective reconnaissance rose from seventy-six percent to ninety percent. Effective

reconnaissance was defined in the CALL study as the reporting of enemy positions and obstacles in sufficient detail to confirm the intelligence preparation of the battlefield (IPB) template by H-1 (H-Hour, or the time the attack is scheduled to begin, minus one hour).[46]

Additionally, in 1988, the Center for Army Lessons Learned published a newsletter for "The Year of Training" and in it compared timely R&S planning with successful attacks. Timely R&S planning permits the scout platoon to receive detailed instructions, and time to move into positions from which to conduct reconnaissance, minimizing the risk of discovery. The information in the newsletter indicated that seventy-three percent of units completing and disseminating timely R&S plans were successful in the attack, while eighty-two percent of the units that did not, were unsuccessful in the attack.[47] The publication found shortcomings in the rapidity with which R&S plans were issued to reconnaissance assets, as well as the scout platoon resupply effort and the overall priority given to battalion task force scouts. Most of the deficiencies and trends noted in the RAND study resurfaced, indicating no substantial change in reconnaissance performance. The CALL newsletter recommended tactics, techniques, and procedures to reduce the delay in getting the scout platoon into the field and emphasized the reconnaissance effort as the basis for successful attacks.[48]

The 1988 newsletter asserted that effective reconnaissance takes time. In order for reconnaissance assets to confirm the IPB template of the threat in support of a deliberate attack, they must be able to identify and plot with six digit accuracy[49], eighty percent of the enemy's anti-tank systems. To collect that level of detail the scouts must

penetrate the enemy defensive zone, and the surest way to do that is for them to dismount from their vehicles. Dismounting, however, significantly increases the time required to move to a position from which to reconointer the enemy. When scouts attempt to penetrate the security zone mounted to save time, they are easily killed, and little or no intelligence is collected. When they dismount to survive, they do not usually arrive in position in time to collect intelligence to support the commander's needs. The challenge is to get the scouts out in sufficient time to increase their chances of survival through stealthful movement, and into reconnaissance positions early enough to provide timely intelligence. Five years later, the shortomings described in 1988 were still occurring.

In a July 1993 bulletin, CALL concluded after analyzing 109 battalion task force battles, that the average casualty rate for scout platoons remained at fifty percent despite the change from M3 Cavalry Fighting Vehicles (CFVs) to HMMWVs.[50] "Stealth, not movement techniques or movement formations, determine scout survivability and mission accomplishment. It is erroneous to conclude that the past attrition of scouts was solely the fault of the CFVs size and noise, and that new HMMWV scout platoons will be more successful."[51] The key factors affecting the scout's ability to perform the reconnaissance mission are training and the time available to perform the mission.[52]

The bulletin recommended that the battalion commander, S3, and the battalion headquarters company commander become involved in training the scouts in four areas to teach them to be stealthy: routes, vehicle position and movement out of position, dismounting, and target acquisition.[53] The same newsletter reiterated that "R&S planning must occur early, ... and be supported by and integrated into the maneuver plan."[54] Again

in 1993, just as in 1988, CALL recognized and stressed in its publications the importance of early R&S plan completion and dissemination, and the impact on the scout platoon's survival and successful reconnaisance.

Recent Reconnaissance Performance

In 1994, MAJ Steven C. Duncan, of the School of Advanced Military Studies, compiled data analogous to the RAND study's . Using comparable methodology, MAJ Duncan extracted from Take Home Packages, the results of reconnaissance performance and the battle outcomes from eleven battalion rotations and sixty-five offensive operations during Fiscal Years 1993 and 1994. The results are in table three:

Table 3

Reconnaissance Results		Battle Outcomes Success	Failure	Standoff
Good	17	8	8	1
Poor	**41**	3	**35**	**3**
Unclear	7	0	6	1

FY 93-94 Battalion Task Force Battle Outcomes based on Reconnaissance Results[55]

A comparison of the data in table 1 and in table 3 shows a small increase in the total percentage of successful reconnaissance missions preceding offensive actions; from twenty-one percent in 1987 to twenty-nine percent in 1994. The percentage of successful attacks occurring after successful reconnaissance dropped from sixty-nine percent in 1987 to forty-seven percent in 1994. In addition, the percentage of attack failures following poor reconnaissance increased from seventy-six percent in 1987 to eighty-five percent in 1994.

The RAND study and MAJ Duncan's research do not conclusively prove or disprove the correlation between reconnaissance and success during offensive operations. There does appear to be evidence, however, of a continuing problem with battalion task force reconnaissance at the NTC, and there does not appear to have been improvement in that performance since the RAND study. It is possible therefore, based upon a comparison of the 1987 RAND study data concerning the percentage of successful reconnaissance missions, with the 1994 data compiled by MAJ Duncan showing the percentage of successful reconnaissance missions, that the recommendations made by the RAND study, and implemented by the U.S. Army, did not result in significant improvements in reconnaissance performance. More recent documents from CALL and other military related publications tend to confirm the lack of improvement in battalion task force reconnaissance. They continue to identify the same deficiencies and generally make similar recommendations. If the changes made to doctrine, training, and equipment did not result in improvement to battalion task force recconnaissance performance, another method of looking at the problem should be considered. When battalion task force reconnaissance is viewed as a process, it divides easily into two phases; a planning phase and an execution phase. Causes of reconnaissance failure may be discussed as occuring in either the planning phase or the execution phase.

Planning Phase

Elements of the reconnaissance planning process are frequently cited as deficient. In, R&S Planning: Cornerstone to Success on the Battlefield, CPT Brian H. Edholm provided additional evidence to support the criticality of R&S planning. "In spite of its

importance, R&S planning has been neglected in current decision making doctrine. This void has compounded differences in understanding and expectations among the key R&S planning players: the Bn/TF commander, the S3, and the S2."[56] The author states that tactical reconnaissance planning, preparation, and execution at the battalion task force level is extremely difficult because the slightest mistake can cause a mission to fail. The planning phase of a reconnaissance mission is where the battalion task force staff has the most influence. "If the scouts and other R&S assets are given an inadequate plan, they will have an uphill battle just to survive."[57] CPT Edholm concludes that there are two obstacles to successful R&S planning: current doctrine which does not include R&S planning in the decision-making process, and education and training which fails to bridge the gap between understanding and expectations and can preclude R&S planning from getting appropriate command emphasis.[58]

CPT Frank J. Abbot provides an excellent example of the results of poor R&S planning in his article from the January 1990 *Red Star Thrust,* "Observations at the NTC." In the article he describes how a battalion task force did not provide a timely or adequate R&S plan for the task force scouts. The scouts moved forward with insufficient intelligence and blunderd into enemy direct fire range. One scout section was destroyed outright and another section was unable to move to a position from which to observe the enemy's defensive preparations. The battalion task force was subsequently defeated during their attack because they possessed little knowledge of the motorized rifle battalion's (MRB's) actual defensive posiions or strength.[59] The scout platoon's struggle was the result of staff planning that was focused on the offensive operational

plan, not the R&S plan. The staff is not completely at fault, however, because emphasis in U.S. Army doctrine is on completion of the operational plan first, using the deliberate decision making process, and not upon timely completion of an R&S plan. Even to a well trained staff, the need for timely completion of an R&S plan is not obvious, especially when doctrine does not emphasize it. Current decision making doctrine does not state when and where in the decision making process the R&S plan should be completed, and battalion task force staffs have not incorporated reconnaissance planning into that process. Though there are examples of efforts to change doctrine by emphasizing R&S planning in the newest versions of FM 101-5 Command and Control for Commanders and Staff (1994 draft), and in FM 34-1 Intelligence and Electronic Warfare Operations (September 1994), they still fall short of integrating R&S planning into the deliberate decision making process. Three recent articles provide further evidence of a general lack of emphasis on reconnaissance planning, by what they do not address.

In the July 1993 *Newsletter*, published by CALL, detailed techniques and procedures were provided to help speed up the deliberate decision making process (DDMP) and help battalion task force commanders and staffs develop, prepare, and execute effective operational plans. The development of an operational plan hinges on the verification of the S2s situational template of the enemy, usually through the intelligence gained from reconnaissance. Although the Center for Army Lessons Learned repeatedly publishes in its newsletters and articles, the dire results of battalion task forces not integrating all staff elements into the early completion of an R&S plan, no

mention at all was made of the R&S plan in the pamphlet, or of its importance to the operational plan. By neglecting to address the development of an R&S plan as an integral part of the DDMP, the newsletter is in alignment with doctirne, but contradicts the level of emphasis being placed on R&S plan development in other CALL publications. The pamphlet describes S2 production of a situation template of the enemy's most probable course of action as a part of the DDMP, but it does not specify when and where the R&S plan should be completed that will guide the reconnaissance effort and will acquire the needed confirmation. The *Newsletter* pamphlet reveals the quandry confronted by battalion task force staffs during every rotation at the NTC; how should the limited time available be used? Just as in the CALL pamphlet, the answer seldom gives priority to timely preparation of the R&S plan even though its importance is acknowledged.[60] In another Center for Army Lessons Learned publication, the timely production of an R&S plan is thought to elude most rotating units because of the S2's ineffectiveness.

Combat Training Centers (CTCs) Bulletin No. 95-1, dated February 1995, states that R&S planning continues to challenge rotational units because S2s do not have a clear end-state to focus collection assets on. The document addresses the failure of S2s to produce event templates or effectively plan for and employ ground surveillance systems. The deficiency is attributed to the S2's general lack of understanding of system capabilities and employment methods. It also states that "The intelligence BOS must understand its relationship within the battle staff and be able to input its product during the planning process."[61] The bulletin neglected to specify when or where in the planning process an R&S plan should be produced, or that the R&S plan is the product of a staff

effort. Instead, it depicted the intelligence BOS (S2) as not adequately contributing to the deliberate decision making process. Without the confirmation of enemy forces provided by reconnaissance, the contributions of the S2 are limited to assumptions based solely on the situational template. Placing sole responsibility for the R&S plan on the S2, and making no provision for integrating R&S planning into the DDP, is the wrong lesson to learn. If the commander and staff do not give emphasis to the production of an R&S plan early in the DDP, the entire reconnaissance effort is jeopardized. Effective R&S plans use all available assets, are published early and with enough information for the scout platoon to begin its mission, and require the participation of the task force commander and staff for successful coordination and execution. The lack of emphasis on reconnaissance within battalion task forces is a reflection of many lessons not learned.

In the May 1995, *Newsletter*, CALL focused on the functioning of the Tactical Operations Center (TOC)[62] . The newsletter described in detail, methods for managing the large amount of information processed within the TOC. Procedures for charting the planning, preparation, and execution phases of tactical operations were detailed, as well as specific procedures for handling messages. No provision was made in any of the detailed descriptions for the development of an R&S plan nor was any mention made of the need to collect intelligence through the scout platoon or any other system. The May 1995 *Newsletter*, by ignoring the necessity for TOC procedures to incorporate reconnaissance planning and execution, illustrates the continuing difference between what are acknowledged shortcomings in reconnaissance planning procedures, and what should be in official publications, a comensurate endeavor to change the process.

There is a continuing lack of emphasis on the R&S plan. In spite of the tremendous amount of evidence proving its importance, the majority of battalion task forces still fail to adequately address R&S planning. The S2 is traditionally the staff member who develops the R&S plan, without the assistance of other staff members, with little specific guidance from the battalion task force commander, and without the high degree of coordination with the S3 required to actually make it work. At best, this lack of emphasis on the R&S plan results in poor intelligence collection. The more likely outcome is the loss of reconnaissance assets and defeat in the subsequent battle.

Execution Phase

Without an effective R&S plan, the efforts of the scout platoon end in failure. On those occasions where an R&S plan is developed on time, and disseminated to the forces executing it, additional challenges surface that work against the reconnaissance system. Clausewitzian "friction" is everywhere in the reconnaissance process, but becomes most apparent in the execution of an R&S plan.[63] Friction is an important aspect of the relationship between the time available to execute the reconnaissance mission, the amount of stealth the scout platoon may employ, and the types of equipment the scout platoon uses to conduct reconnaissance. Removal of armored vehicles from the scout platoon and replacing them with thin skinned HMMWVs, requires the scouts to use increased stealth. Stealth requires the scout platoon to have adequate time to plan the mission and to maneuver through the enemy security zone. The timely publication of the R&S plan therefore, has a direct impact on the successful execution of the reconnaissance mission. Combat Training Centers (CTCs) Bulletin NO. 93-4, concluded

that stealth determines scout survivability and mission accomplishment. The bulletin also observed that if the commander and staff do not focus the reconnaissance effort, then the scouts will assume too many missions, and will not have time to move without enemy contact. Likewise, the bulletin observed that when the scouts cross the LD with the main body, primarily because of a late R&S plan, "they simply roar down the zone to keep ahead of the battalion."[64]

Failure to augment the scout platoon with elements of other battlefield operating systems also inhibits successful execution. The battalion task force S3 is responsible for tasking and synchronizing combat multiplier assets (engineers, communications retrans, fire support, combat service support, etc.) with the reconnaissance plan, and ensuring that the reconnaissance plan is as well integrated, synchronized, and supported as the operations plan.[65] The Tarantula Team of the Operations Group at the NTC observed that task force S3s and commanders often neglect this phase of the battle, "delegating responsibility for planning, integrating, and supervising the reconnaissance effort to the S2, resulting more often than not in a failed reconnaissance effort."[66]

Of the four areas identified by the 1987 RAND Study as reasons for battalion task forces failing to succcessfully execute reconnaissance prior to a deliberate attack, the scout platoon's failure to avoid detection was predominant, occurring seventy-seven percent of the time. Only the failure of the staff to coordinate the reconnaissance effort during the execution phase of the scout mission was worse, occurring seventy-eight percent of the time.[67]

There is a consistency in the observations of NTC controllers, members of the

OPFOR, commanders and staffs fighting at the NTC, and in the findings of reconnaissance focused studies. Observations consistently acknowledge the importance, indeed the criticality of successful reconnaissance to the success of offensive operations, and the necessity to quickly produce an R&S plan. Just as consistent among commanders and staff members of rotating units at the NTC, is the priority given to completion of an operational plan with secondary importance placed on development of an R&S plan. Inconsistency between what is professed as critical, and what is actually done, is perpetuated by doctrine and published lessons learned that highlight the inadequacy of task force reconnaissance planning and execution, but fail to provide tactics, techniques, and procedures (TTP) for the incorporation of the reconnaissance effort into the operational plan or the deliberate decision making process. Failure to produce an R&S plan quickly, during the planning phase, increases the probability of the loss of reconnaissnace assets during the execution phase, and a subsequent lack of timely, accurate intellignece. Without the intellignece provided by ground reconnaissance, a planned deliberate attack devolves into a movement to contact, usually without sufficient time for the requisite reorganization of forces consistent with that form of tactical offensive.[68] The partially blinded battalion task force attacks, and is defeated.

Both the planning phase and the execution phase shortcomings, are complex problems requiring more than the introduction of additional hours of instruction at appropriate schools, or additional lines of doctrine to numerous publications, or acquisition of different vehicles and equipment. Those methods were tried a decade ago and have not provided the needed results. The solutions require a systems approach.

IV. Systems Theory and the Battalion Task Force Reconnaissance Process

A Failure to Learn

"The failure to absorb readily accessible lessons from recent history, is in many ways, the most puzzling of all military misfortunes."[69] The recurring reconnaissance failures at the National Training Center are reminiscent of what is described as a "failure to learn", in Eliot A. Cohen and John Gooch's book, Military Misfortunes. In a historic and dramatically detailed example, they describe how the U.S. Navy was unable or unwilling to use the hard learned lessons of previous British anti-submarine warfare (ASW) experience, to counter the virtually unimpeded German U-Boat massacre of allied shipping between the United States and Great Britain, from January to September 1942.

The American failure to recognize the desperate need to implement proven tactics including convoying, and centralized planning and coordination, came very close to indefinitely prolonging the war in Europe.[70] Many aspects of this failure to learn, are similar to the U.S. Army's inability to substantially improve battalion task force reconnaissance at the NTC over the past nine years. Just as the U.S. Navy recognized and sought cooperation with the British, concerning anti-submarine warfare prior to WWII, battalion task forces extensively prepare and train prior to their time "in the box" at the National Training Center. Initial analysis of the ASW failure attributed the severe losses to a shortage of resources, specifically aircraft and escort vessels. This material oriented explanation received a typically industrial age solution; increased production of aircraft and naval vessels. The initial explanation was eventually discarded, however,

when the resource shortages were filled, and the high rate of merchant shipping losses remained.

Similarly, tangible and quantifiable solutions to the poor reconnaissance performance by battalion task forces at the NTC were implemented, and resulted in negligible performance improvements. The addition of lines and paragraphs of doctrine to field manuals, increased hours of tactical and even reconnaissance training at service schools, and additional numbers of and changes to equipment, resemble the initial attempts to rectify the ASW failure with increased material productivity. Just as the WWII German Navy Commander, Admiral Doenitz, believed that the American problem was organizational or doctrinal, not material,[71] the Opposing Forces at the NTC have stated that the reasons for battalion task force reconnaissance failures are related to inadequate planning and execution, not material. Similarly, just as the core issues of American ASW failure early in WWII pointed to a systems problem, where intelligence, organization, and control were the keys to eventual success, the reconnaissance failure at NTC is a complex systems problem requiring an understanding of the interaction of more than one element to form an effective process.

A Complex Problem

Historically, for more than 300 years, the scientific community has accepted and used, a process known as reductionism, which attempts to find solutions to large complex problems by breaking the problems into smaller pieces, and then working to solve the individual, more manageable parts. The RAND study's scientific analysis followed a reductionist process because it is an accepted scientific approach. The study

broke the reconnaissance problem into three areas; doctrine, training, and equipment. The recommended solutions were equally compartmented, and as a result, the study did not address reconnaissance as a system with multiple, dynamic, and interrelated parts.

In his book, Complexity, Mitchell Waldrop describes several examples of how the scientific disciplines have become increasingly isolated from each other as the problems within each discipline become more complex.[72] "You look for the solution of some more or less idealized set of problems, somewhat divorced from the real world . . . and that leads to more and more fragmentation . . . whereas the real world demands - a more holistic approach. Everything affects everything else, and you have to understand that whole web of connections."[73] His notion is that a systemic, interdisciplinary approach is required in order to address real world complex problems. Likewise, the battalion task force reconnaissance failures at the NTC are complex problems requiring an understanding of the reconnaissance system and the interrelationships of its parts. The RAND study, and the studies completed after it, provided analysis of the problem, but not a systems view of the entire reconnaissance process.

Systems Thinking

Analysis facilitates dealing with large complex problems by breaking those problems into more manageable pieces. Synthesis attempts to put the pieces of a problem together in a new form or pattern to create a change for the better. In his book, The Fifth Discipline, Peter M. Senge states that "the task (the synthesis of parts of a problem) is futile -- similar to trying to reassemble the fragments of a broken mirror to see a true reflection", and that the price we pay for breaking down complex problems

into more manageable pieces, is the loss of the big picture; that we are no longer able to see the whole, and the interrelationships of the pieces that make up the whole.[74]

Peter M. Senge developed a method for looking at complex problems, and he described three levels of explanation to any complex situation (Figure 1).

Systemic Structure (generative)

⇓

Patterns of Behavior (resposive)

⇓

Events (reactive)

Figure 1

The three levels of explanation possess equal value in different situations. The events (reactive) level is the most common and attempts to determine "who did what to whom."[75] It provides immediate feedback and the illusion that the problem has been solved. This level of explanation is acceptable to current U.S. Army thinking because it is tangible and provides quick results. The persistence of the task force reconnaissance problem has shown, however, that event (reactive) solutions do not work. Each task force rotation at the NTC ends with an after action review (AAR) which highlights what went well and what did not. Though the environment of the AAR is one of introspection and self assessment, the solutions to what did not go well usually fall in the event (reactive) level. An illusion of learning is created because the shortcomings are identified, and the responsible individuals know what the deficiencies were. Underlying problems remain because changes to behavior are not made at this level of resolution. The structure of the operational and reconnaissance systems remain the same. The institutional response for overcoming the reconnaissance failures of battalion task forces

at the NTC has been more lines of doctrine in field manuals, more hours of instruction on scouting and reconnaissance tactics, techniques, and procedures at combat arms and intelligence schools, and more and different vehicles and equipment. This way of thinking is reactive, emphasizes quantifiable answers as the solution, and does not change behavior.

The next higher level of explanation deals with patterns of behavior. This explanation attempts to take a longer view of the problem and break the grip of short term reactiveness. It looks for trends and suggests over a longer term, how we may respond and change.[76] The most powerful level of explanation, however, is the structural explanation, because it focuses on the question, "what causes the patterns of behavior?"[77]

Structural explanations are important because they address underlying causes of behavior that can be changed. "Since structure in human systems includes the operating policies of the decision makers in the system, redesigning our own decision making redesigns the system structure."[78] To find the cause of reconnaissance failure at the NTC it is necessary to develop a model of the pattern of behavior, and then establish the cause or causes of the undesirable behavior.

COL John R. Boyd's Observe, Orient, Decide and Act (OODA) loop, provides a model that applies to the unresolved problem of battalion task force reconnaissance failure (Figure 2).[79] The OODA loop explains the previous decade of inaction or inappropriate action to correct the reconnaissance challenge. The starting point for the loop is "observe." The failure of reconnaissance by battalion task forces at the NTC has been and continues to be observed. Documentation verifying poor reconnaissance

performance is extensive. Observations by OCs, OPFOR personnel, and Bn/TF commanders and staffs, confirm a requirement for increased emphasis on reconnaissance planning and the preparation of the R&S plan. What occurs in the "orientation" step is crucial.

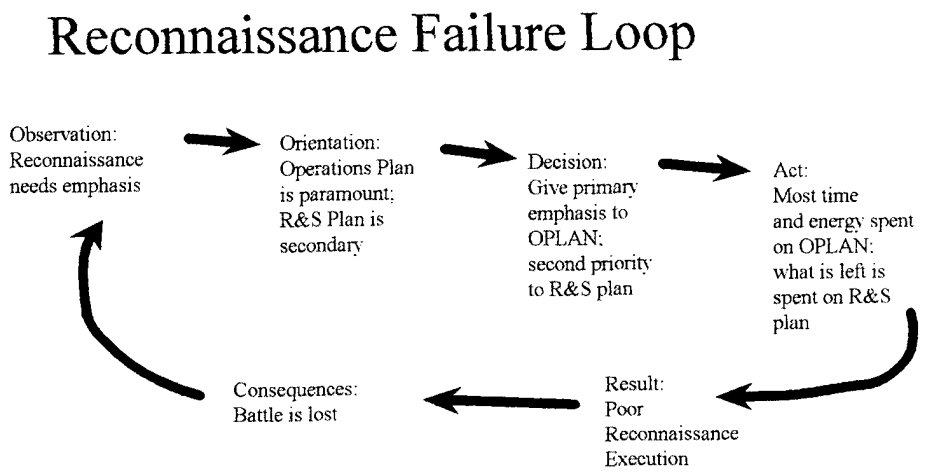


Figure 2

Orientation as defined by Boyd, is the repository of our genetic heritage, cultural tradition, and previous experiences.[80] It is the most important part of the loop because it shapes the way events are observed, the way decisions are made, and what actions are taken. Orientation shapes the mental images each individual creates. Peter M. Senge would describe those mental images as mental models.[81] The mental model shared by most commanders and their staffs makes the operational plan the most important document generated during the deliberate decision making process (DDMP). It is the reason for the DDMP's existence, almost to the exclusion of all else. The existence of

this mental model could be the reason the "decide" and "act" parts of the loop do not provide the desired outcome, successful battalion task force reconnaissance.

During the decision portion of the model, the reconnaissance and surveillance plan is given second priority to the operations plan because of the battalion task force commander's and staff's shared mental model. The decision guides their actions and provides most of the limited time and personnel resources to development of the OPLAN, with only minimal time and energy to the R&S plan. The impact of this decision is enormous, as evidenced in chapter III. It is a conscious decision based upon a mental model that does not connect the long term goal, a successful attack, with the success or failure of reconnaissance, which is driven by the timely production of a reconnaissance and surveillance plan.

Senge cites the example of Royal Dutch/Shell, when the oil company discovered how pervasive the influence was of widely shared, hidden mental models. Shell's learned ability to surface and challenge manager's mental models resulted in extraordinary success in maneuvering through the dramatic changes and unpredictability of the world oil market in the 1970s and 1980s. Shell moved form the weakest of the big seven oil companies in the early 1970s to the strongest in the late 1980s.[82] Shell determined that adaptation and growth depend on "institutional learning, which is the process whereby management teams change their shared mental models of the company, their markets, and their competitors. For this reason, we think of planning as learning, and of corporate learning as institutional learning."[83] For a battalion task force, institutional learning is the process whereby commanders and staffs change their shared mental models of the

unit, the battlefield, and the enemy. To do that they must learn to unearth their internal preconceptions and hold them to rigorous scrutiny; to expose their own thinking effectively and make that thinking open to the influence of others.[84]

Systems thinking is an art that requires the artist to recognize increasingly complex and subtle structures. It is a part of the art of war that is rarely applied due to the ever increasing reliance on the science of war. The tempo of modern combat operations does not permit most individuals the time to reflect or to discern patterns from the events around them. Instead, they are increasingly dependent upon technology and the commander and staff as scientists, with very little reliance upon the commander as an artist.

V. Conclusion

Battalion task force reconnaissance failure may actually require only an interim solution. According to TRADOC Pam 525-5 Force XXI Operations, "advanced Army and joint intelligence systems . . . will enable commanders to detect and track enemy forces throughout a given battlespace . . . information about enemy posture, position, and activity will be known earlier and in far greater detail than ever before."[85] The vast array of intelligence systems about to be fielded to the U.S. Army, contain the potential to make scout platoons and their hard earned intelligence obsolete. Additionally, a division force structure under consideration for Force XXI would include an entire cavalry squadron in each heavy brigade.[86] The type of detailed reconnaissance the battalion task force and its scout platoon currently attempt to plan and perform would not be required, because brigade reconnaissance assets would be robust enough to collect intelligence

throughout the enemy's security zone through passive and aggressive means.

Force XXI Operations also states, however, that information provided by soldiers must verify the digitally portrayed common picture, and that human intelligence "will often remain the only source of reliable information about the enemy, even on the highly technical battle space of tomorrow."[87] This apparent contradiction between the forecast of heavy reliance upon technology based reconnaissance, and the requirement for human intelligence, is a reflection of a mental model that places ultimate trust for intelligence collection in soldiers, and indicates that an interim solution to the battalion task force reconnaissance problem may become more permanent. A long term solution requires a change in not only the reconnaissance system's structure, but also the battalion task force's operational war fighting structure. A key part of that change may include an examination of the U.S. Army's individual and institutional mental models regarding battalion task force reconnaissance.

ENDNOTES

1. Headquarters, Department of the Army, FM 34-8, Combat Commander's Handbook on Intelligence, (September 1992), p. 3-3.

2. Ibid.

3. The National Training Center (NTC) provides CONUS-based heavy battalion task forces two weeks of advanced , intensive combat training on a rotational basis in a general environment applicable to Europe, North Africa, or the Middle East. (AR 350-41) The NTC may be unique among training facilities in that it pits the unit being trained (BLUEFOR) against an in-place, skilled opposing force (OPFOR) in situations where both forces are able to react to the initiatives of the other. The scenarios are loosely set establishing the requirement for effective reconnaissance and counter-reconnaissance. Martin Goldsmith with James Hodges, Applying the National Training Center Experience: Tactical Reconnaissance, (Santa Monica, CA: RAND Corporation, 1987), p. 1.

4. The Army documents citing reconnaissance failures of battalion task forces at the NTC include National Training Center Trends, 4th Quarter, FY 94 , National Training Center Trends, 1st Quarter, FY 95 , and Combat Training Centers (CTCs) Bulletin No. 93-4, Jul 93. The RAND Corporation study referred to is entitled Applying the National Training Center Experience: Tactical Reconnaissance by Martin Goldsmith and James Hodges (1987). Additional documentation of tactical reconnaissance failures at the NTC is contained in U.S. Army Heavy Brigade Reconnaissance During Offensive Operations, a School of Advanced Military Studies monograph by LTC Thomas C. McCarthy (1994), Seven Years After - Has Task Force Ground Reconnaissance Improved Since the RAND Study?, a School of Advanced Military Studies monograph by MAJ Stephen C. Duncan (1994), and The Burden Our Soldiers Bear: Observations of a Senior Trainer (OC), a United States Army War College Directed Study by LTC John D. Rosenberger (1995).

5. Headquarters, Department of the Army, FM 100-5, Operations, (June 1993), p. 6-15.

6. Ibid. pp. 6-15, 7-11, 8-5.

7. Headquarters, Department of the Army, FM 71-100, Division Operations, (June 1990), p. 1-18.

8. Ibid. p. 4-9.

9. Headquarters, Department of the Army, FM 71-123, Tactics and Techniques for Combined Arms Heavy Forces: Armored Brigade, Battalion/Task Force, and Company/Team, (September 1992), p. 2-49.

10. Headquarters, Department of the Army, FM 71-100-1 (Final Draft), Armored and Mechanized Division Operations Tactics, Techniques, and Procedures, (1993), p. 5-57.

11. Headquarters, Department of the Army, Doctrinal Review and Advisory Group (DRAG) conference for Corps and Division Field Manuals, Reconnaissance and Security White Paper, (1994), p. 2.

12. Reconnaissance and Security White Paper, (1994), p. 3.

13. FM 71-123, p. 2-49.

14. Reconnaissance and Security White Paper, p. 10.

15. Headquarters, Department of the Army, FM 71-2, The Tank and Mechanized Infantry Battalion Task Force, (September 1988), p. 1-8.

16. Ibid, p. 3-19.

17. The general categories of reconnaissance performed by the scout platoon include: area reconnaissance, which is directed to obtain detailed information about the enemy or terrain within a prescribed area; point reconnaissance, if the effort is directed against a specific terrain feature or enemy facility; zone reconnaissance, which is performed when the enemy situation is vague or maneuverability is in doubt: and route reconnaissance, which is "reconnaissance along a specific line of communication, such as a road, railway, or waterway, to provide new or updated information on route conditions and activities along the route." Headquarters, Department of the Army, FM 101-5-1, Operational Terms and Symbols (January 1994). Recently a fourth category of reconnaissance was added, force oriented reconnaissance. Force oriented reconnaissance is usually conducted by a combined arms unit of considerable force. Reconnaissance units, including the scout platoon, will be task organized to participate in the operation. Reconnaissance and Security White Paper, p. 10.

18. Scout platoon missions listed in FM 17-98 include: conduct liaison, perform quartering party duties, provide traffic control, conduct chemical detection and radiological survey monitoring operations as part of a nuclear, biological, and chemical (NBC) defense, conduct limited pioneer and demolition work, and participate in area security. Headquarters, Department of the Army, FM 17-98, Scout Platoon (September 1994), p. 1-4.

19. Headquarters, Department of the Army, FM 17-98, Scout Platoon, (September 1994), p. 2-2.

20. A full strength scout platoon reconnoiters only a single route during route reconnaissance, METT-T is the determining factor; reconnoiters a zone 3 to 5 kilometers wide, METT-T may increase or decrease the zone; is extremely limited in its ability to repel enemy reconnaissance units, in fact during counter-reconnaissance operations it can only acquire and maintain contact with the enemy and requires augmentation with infantry, armor, or anti-tank assets in order to kill or repel the robust Soviet style reconnaissance organizations; is restricted in the distance it

can operate from the main body due to communications range and the range of supporting elements; operates six observation posts (OPs) for limited periods (under 12 hours) or three OPs for extended periods (over 12 hours); cannot operate on more than two communications nets at a time; and when equipped with the HUMMV is restricted to fording bodies of water no more than 30" deep. In addition, scout teams equipped with HUMMVs but not equipped with thermal sights, such as the AN/UAS-12, which is associated with the TOW missile system, have a night vision range limit of about 600 meters. Headquarters, Department of the Army, FM 34-2-1, Tactics, Techniques, and Procedures for Reconnaissance and Surveillance and Intelligence Support to Counterreconnaissance (June 1991), pp. 3-2 to 3-6.

21. Ibid., p. 1-4.

22. Headquarters, Department of the Army, FM 34-8, Combat Commander's Handbook on Intelligence (September 1992), p. 1-1.

23. FM 17-98, p.1-3.

24. Headquarters, Department of the Army, EM 17-98-1, Scout Leader's Handbook (September 1990), p. 1-11.

25. Martin Goldsmith with James Hodges, Applying the National Training Center Experience: Tactical Reconnaissance, (Santa Monica, CA: RAND Corporation, 1987), p. 49.

26. FM 34-8, p. 2-6.

27. RAND Corporation selected the NTC for the study because of its realistic combat scenarios. Data was collected from 17 battalion task forces conducting 113 force-on-force battles. The study evaluated Take Home Packages containing the unit mission statement, a narrative summary of the battle, specific unit findings, and statistics on casualties. The study then compiled the data into statistical tables portraying the magnitude of the shortcoming. RAND evaluated then current doctrine, reconnaissance training, and looked at how the scout platoon was organized and equipped. The focus was on reconnaissance performed during offensive operations because it requires an active search for intelligence, whereas during defensive operations the primary goal is counterreconnaissance or denying the enemy intelligence on friendly forces. RAND conducted interviews with observer/controllers and captured many of their observations on data collection cards specifically developed for the study. The data collection cards and interviews, although subjective, verified what had been concluded from analyzing the take home packages.

28. Martin Goldsmith with James Hodges, Applying the National Training Center Experience: Tactical Reconnaissance, (Santa Monica, CA: RAND Corporation, 1987), pp. 1-3.

29. For more information on the early recognition of the task force reconnaissance problem at the NTC see: Ozolek, Major David J., "Reconnaissance Planning: A Neglected Art," *Infantry*, March-April 1986; and Ozolek, Major David J., "Counterreconnaissance," *Infantry*, September-

October 1986.

30. Martin Goldsmith with James Hodges, Applying the National Training Center Experience: Tactical Reconnaissance, (Santa Monica, CA: RAND Corporation, 1987), p. v.

31. Ibid, p. 67.

32. Ibid, p. 6.

33. Ibid, pp. 7-8.

34. Ibid, p. 9.

35. Ibid, p. 39.

36. Ibid, pp. 30-31.

37. Ibid.

38. Ibid, p. 67.

39. Ibid, p. 68.

40. Ibid.

41. Ibid.

42. Ibid, p. 69.

43. Headquarters, Department of the Army, FM 17-98, Scout Platoon (September 1994) p. 1-1.

44. Applying the National Training Center Experience: Tactical Reconnaissance, p. 52.

45. Major George Franz, 1990 graduate of the Military Intelligence Officer Advance Course, student, School of Advanced Military Studies, Fort Leavenworth, Kansas, interview by author, 6 November 1995.

46. Center for Army Lessons Learned, Compendium, (Fort Leavenworth, KS: CATA, 1988), p. 4.

47. Ibid, p. 5.

48. Ibid.

49. The military grid reference system used for land navigation divides landmasses into one kilometer squares. Each square is subdivided into 100 meter squares, and each of those into 10

meter squares. A one kilometer square is identified by four digits preceded by letter identifiers (i.e. PB4658) and has is accurate to within one kilometer. A six digit coordinate on a grid map is accurate to within 100 meters, and an eight digit coordinate to within 10 meters.

50. Center for Army Lessons Learned, Combat Training Centers (CTCs): Bulletin No. 93-4, (Fort Leavenworth, KS: CAC, 1993), p. 4.

51. Ibid.

52. The CALL bulletin indicated that a primary problem was scout training.

Route selection - Routes chosen by the platoon should minimize risk, avoid skylining, and avoid open areas. Routes should strike a compromise based upon METT-T (mission, enemy, terrain, troops - time).

Vehicle position - A common shortcoming that is the responsibility of the vehicle commander. Unless overwatching other moving scouts, rarely will any scout stop his vehicle unless in a hide position.

Movement out of position - When leaving a hide position or any other defilade, do not drive directly forward. If the vehicle was detected while halted and is driven straight forward it will be destroyed.

Dismounting - The most important scout survival skill. Dismounted OPs are much more difficult to detect. Scouts must dismount to cross open areas and short of the enemy's maximum effective weapons range from known or suspected locations.

Scouts failed to find targets before the enemy saw them and did a poor job of constructing and concealing their OPs. Because of time constraints, they often did not dismount and when they did, it was often within range of enemy weapons. The number one killer of scouts is direct fire. The number two killers are artillery and HIND-Ds (an OPFOR attack helicopter). Ibid, p. 5.

53. Ibid.

54. Ibid, p. 11.

55. MAJ Stephen C. Duncan, Seven Years After - Has Task Force Ground Reconnaissance Improved Since the Rand Study?,(Fort Leavenworth, KS: School of Advanced Military Studies, 1994), p. 23.

56. CPT Brian H. Edholm, "R&S Planning: Cornerstone to Success on the Battlefield" *Military Intelligence Professional Bulletin* (Fort Huachuca, AZ: U.S. Army Intelligence Center and Fort Huachuca, July-September 1993), p. 27.

57. Ibid, p. 28.

58. Ibid, p. 29.

59. CPT Frank J. Abbott, "Observations at the NTC," *Red Thrust Star*, (Fort Irwin, CA: U.S. Forces Command, January 1990), pp. 14-17.

60. Center for Army Lessons Learned, Newsletter: The Battalion and Brigade Battle Staff (Fort Leavenworth, KS: CATA, July 1993).

61. Center for Army Lessons Learned, Combat Training Centers (CTCs) Bulletin NO. 95-1, (Fort Leavenworth, KS: CATA, February 1995), pp. 13-14.

62. TOC (Tactical Operations Center) - A physical groupment of those elements of the staff concerned with the current tactical operations and the tactical support thereof. FM 101-5-1, p. 1-227.

63. Carl von Clausewitz defined friction as, "The only concept that more or less corresponds to the factors that distinguish real war from war on paper." Carl von Clausewitz, On War, (Princeton, NJ: Princeton University Press, 1976), p. 119. As used here, friction is the occurrance of events counter to the reconnaissance plan, and impeding its planned execution.

64. Center for Army Lessons Learned, Combat Training Centers (CTCs) Bulletin NO. 93-4, (Fort Leavenworth, KS: CATA, July 1993), pp. 4-5.

65. National Training Center, Tarantula Team Observations and Lessons Learned, (Fort Irwin, CA: Operations Group, 1995), p. 19.

66. Ibid, p. 20.

67. Applying the National Training Center Experience, pp. 30-31.

68. Execution of a movement to contact is conducted when the enemy situation is not well known. It requires the organization of a strong advanced guard force to seek out and maintain contact with the enemy until the main body arrives to decisively defeat the enemy's main force. A deliberate attack relies on scouts to locate the defending enemy positions in sufficient detail, so that the enemy situation is at least eighty percent known. When a deliberate attack is undertaken without sufficient knowledge of the enemy, and without the advance guard of a movement to contact to provide security, the attacking force is usually defeated.
FM 100-5 Operations, pp. 7-3 - 7-4.

69. Eliot A. Cohen with John Gooch, Military Misfortunes (New York: The Free Press, 1990), p. 26.

70. During the period from January to September 1942, shipping losses within a few hundred miles of the American coast exceeded the total production of ships in the United States by 200,000 tons per month. The exact cause of the failure was alternately attributed by various authors, to one man, the Chief of Naval Operations, Admiral Ernest J. King or the U.S. Navy as a whole. Ibid, pp. 59-66.

71. Ibid, p. 75.

72. Mitchell Waldrop, Complexity, (New York: Simon and Schuster, 1992), p. 60.

73. Ibid, pp. 60-61.

74. Peter M. Senge, The Fifth Discipline: The Art and Practice of the Learning Organization, (New York: Doubleday, 1990), p. 3.

75. Ibid, p. 52.

76. Ibid.

77. Ibid, p. 53.

78. Ibid.

79. COL John R. Boyd, Organic Design for Command and Control, (Maxwell AFB, AL: May 1987), p. 26.

80. Ibid.

81. "Mental models are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action. Very often, we are not consciously aware of our mental models or the effects they have on our behavior." Peter M. Senge, The Fifth Discipline: The Art and Practice of the Learning Organization, (New York: Doubleday, 1990), p. 8.

82. Ibid, p. 9.

83. Ibid, pp. 8-9.

84. Ibid, p. 9.

85. Headquarters, Department of the Army, TRADOC Pam 525-5, Force XXI Operations, (1 August 1994), p. 3-6.

86. Sean D. Naylor, "Three Options for Four Stars: Army Weighs Choices to Decide Direction of the Future Division," *Army Times*, (Springfield, VA: Army Times Publishing Company, October 16, 1995), p. 13.

87. TRADOC Pam 525-5, p. 3-6.

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