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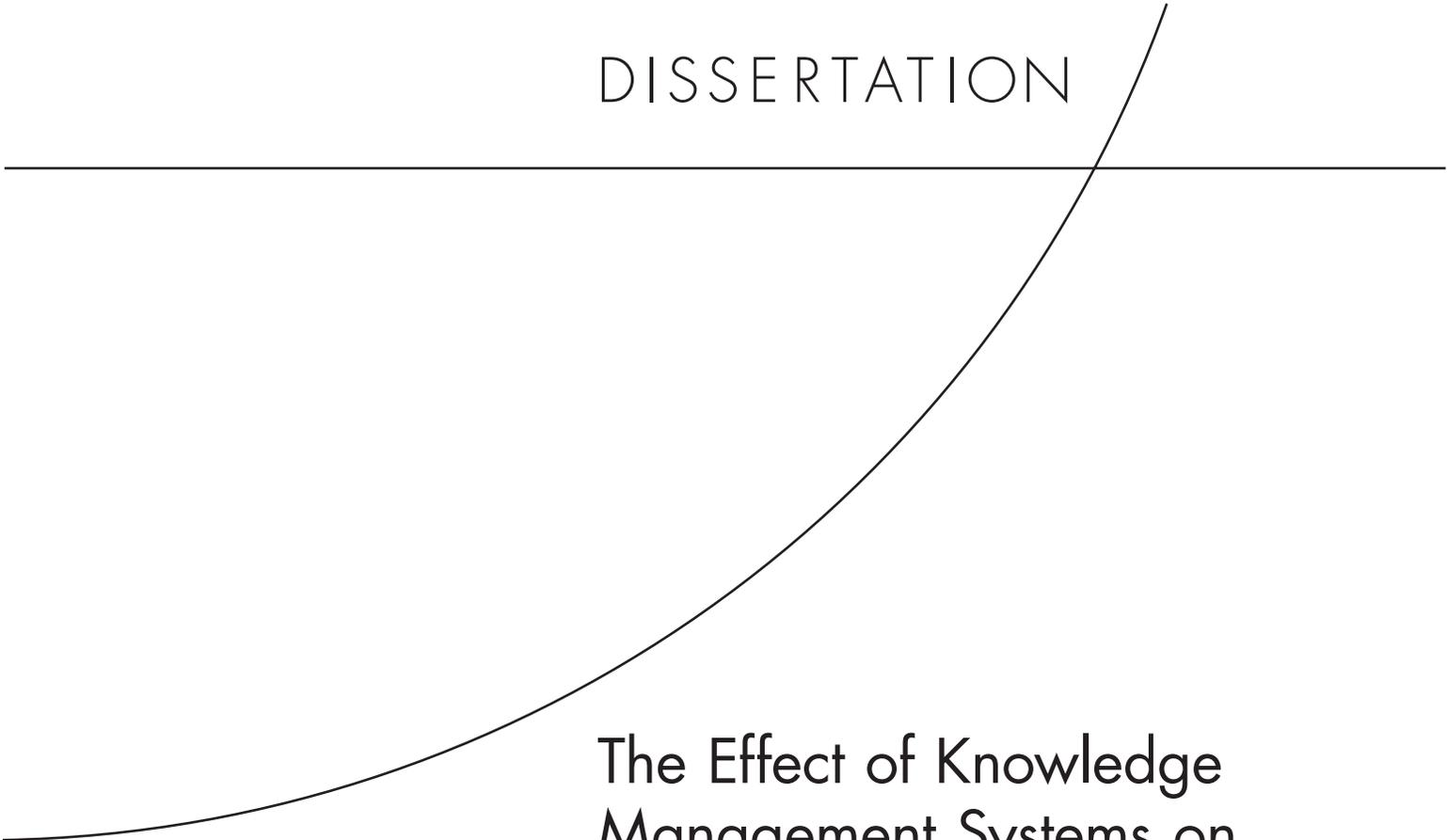
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DISSERTATION



The Effect of Knowledge Management Systems on Organizational Performance

Do Soldier and Unit Counterinsurgency
Knowledge and Performance Improve
Following “Push” or “Adaptive-Push”
Training?

S. Jamie Gayton

This document was submitted as a dissertation in June 2009 in partial fulfillment of the requirements of the doctoral degree in public policy analysis at the Pardee RAND Graduate School. The faculty committee that supervised and approved the dissertation consisted of Bryan W. Hallmark (Chair), James T. Quinlivan, and Matthew W. Lewis.



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PREFACE

My interest in Knowledge Management Systems stems from my experience commanding a battalion during Operation Iraqi Freedom III in Baghdad, Iraq. Prior to deployment, I wanted to provide my leaders the most up to date information available on the enemy's use of improvised explosive devices (IEDs). In order to acquire and organize this type of information, I went to the Army's Center for Army Lessons Learned (CALL) website and began searching through myriad data on the subject. When I called the organization to find their synthesized, pruned, "push" version of the slides that would contain the information I requested, I was directed back to the myriad data. I was stymied. Despite tremendous amounts of available data, the organization was counting on an inefficient strategy in which each leader used his time to synthesize and prune the data to prepare it for his subordinates. I noted at the time that a more efficient and effective means of distributing tactical information must be possible and planned to engage this possibility at some point in the future.

Upon reassignment to the Pardee RAND Graduate School to pursue a doctoral degree, I had the opportunity to study the possibility of changing aspects of the Army's knowledge management systems. There are leaders in the Army who are proponents of the SWfF concept and accept without empirical support that organizations that use the SWfF tools, including push tools, will increase their performance. At the same time, there are other leaders who question the need for the SWfF organization and in particular the underlying assumption of increased performance of units as they use the tools. My knowledge management research opportunity came in the form of a RAND Arroyo project to conduct an empirical assessment of the Stryker Warfighters' Forum (SWfF) organization's contribution to learning for soldiers and units preparing for a contingency deployment. During my project research, I became specifically interested in how the delivery method of information would affect performance.

This dissertation was submitted to the Pardee RAND Graduate School in 2009 in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Policy Analysis. The dissertation examined the relationship between the use of knowledge management systems and the subsequent gain in knowledge by individuals and the increase in performance by organizations. Specifically, I empirically assessed the "push" delivery

method (leaders identify and push relevant information to subordinates) and “adaptive-push” delivery method (leaders and subordinates interact to identify relevant information and leaders push to subordinates). I examined this relationship by empirically assessing the knowledge gain in soldiers and the performance increase by units through two studies. In the first study, soldiers received information using a push delivery method and in the second study they received information through an adaptive-push delivery method.

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ABSTRACT

The U.S. Army's deployment tempo has put pressure on the Army's available training time to prepare for deployments. To better support units' training, and subsequently, preparations for and conduct of counterinsurgency and stability operations, the Army created the Stryker Warfighting Forum (SWfF), a network-centric, knowledge repository designed to increase Stryker soldier knowledge and unit performance. This dissertation conducted two studies to determine whether using a "push" (leader identified and delivered) or an adaptive-push (identified by leader and subordinate interaction and leader delivered) delivery of information by the SWfF, would help increase soldier knowledge and unit performance.

In the first study (push delivery) statistically significant individual-level knowledge gains occurred as a result of soldiers' participation in an existing SWfF facilitator-led, multimedia virtual training event called the Hundredth House. In the second study (adaptive-push delivery) statistically significant gains in unit-level performance at the Army's combat training centers were associated with units using the Iraq Common Event Approaches Handbook. This Handbook was developed from combat-returnee feedback on ten events commonly faced by soldiers in Iraq. These results lend support to the concept that knowledge and performance will improve as a result of using push and adaptive-push delivery methods.

These findings suggest that Army senior leaders may want to ensure their knowledge management systems are adequately employing push and adaptive-push delivery methods that lead to increased individual knowledge gains and organizational performance.

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ACRONYMS AND GLOSSARY

Acronym/term	Definition
1LT	Army rank – first lieutenant
2LT	Army rank – second lieutenant
AAR	After action review
ABN	Airborne
Adaptive-push (delivery of knowledge/information)	Method by which the users (pullers) of knowledge interact with the providers (pushers) of knowledge in an iterative fashion to synthesize, shape, and prioritize the resulting information pushed to users that oftentimes would not be obtained by pullers act
AMC	Army Materiel Command
ANOCOVA	Analysis of covariance
ANOVA	Analysis of variance
ARFORGEN	Army forces generation
BCT	Brigade combat team
CALL	Center for Army Lessons Learned
CG	Commanding general
CGIG	Commanding general’s initiatives group
CM	Consequence management
COIN	Counterinsurgency
COP	Combat outpost
Corporal	Army rank - corporal
CS	Cordon & search
CTC	Combat training center
DOTLMPF	Doctrine, organizations, training, leader development, materiel, personnel and facilities
DP	Dismounted patrol
Dwell time	Length of time a service member remains at home-station between deployments.
FCS	Future Combat System
FOB	Forward operating base
FORSCOM	Forces Command
FSO	Full spectrum operations
GOSC	General officer steering committee
HD	Hasty/deliberate [checkpoint]
HIC	High intensity conflict
Home station	Home station is a soldier’s place of assignment. It is generally where individual and small unit training is conducted. When soldiers are at home station they generally return to their homes in the evenings except during quarterly or semi-annual field t
Hundredth House	Leader decision-making tool available on Strykernet website
HWfF	Heavy Warfighting Forum
IBCT	Interim brigade combat team
ICEA	Iraq Common Event Approaches [handbook]
IED	Improvised explosive device
IF	Indirect fire

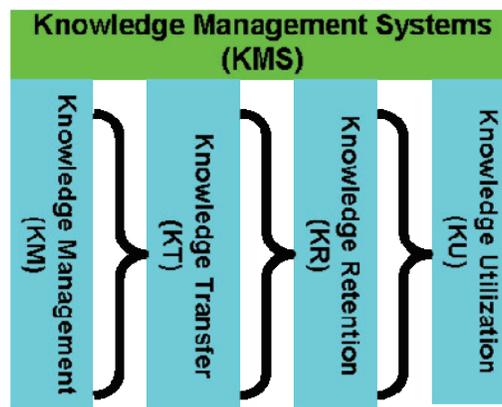
Acronym/term	Definition
IWfF	Infantry Warfighting Forum
JE	Junior enlisted - category of Army ranks including PVT, PV2, PFC, SPC, and CPL
JRTC	Joint Readiness Training Center – one of the Army’s CTCs
JSS	Joint security station
KM	Knowledge management
KMS	Knowledge management systems
KR	Knowledge retention
KT	Knowledge transfer
KU	Knowledge utilization
MCO	Major combat operations
MS	Meeting site [secure habitual]
MTN	Mountain
NCO	Category of Army ranks – for this analysis noncommissioned officer includes SGT and SSG
NTC	National Training Center – one of the Army’s CTCs
OC	Observer controller [NTC]
PFC	Army rank – private first class
Pull (delivery of knowledge/information)	Data being available in a repository for individuals or teams to find and extract or “pull” out for use.
Push (delivery of knowledge/information)	Data being consolidated, prioritized, and pushed to individuals or teams.
PVT	Army rank - private
PV2	Army rank - private
QRF	Quick reaction force
RD	Raid
ROE	Rules of engagement
SBCT	Stryker brigade combat team
SCLL	Stryker Center for Lessons Learned
SGT	Army rank - sergeant
SOP	Standing operating procedure
SPC	Army rank - specialist
SSG	Army rank - staff sergeant
Stryker	Wheeled combat vehicle
Strykernet	Website established and maintained by SWfF as the home for SWfF’s knowledge repository
STX	Situational training exercise
SUI	Stryker university initiative
SWfF	Stryker Warfighters’ Forum - a network-centric, knowledge repository designed to collect and provide lessons learned and deliver tools to increase Stryker soldier knowledge, and increase Stryker unit performance.
TM	Trainer/mentor [JRTC]
TRADOC	Training and Doctrine Command
TTPs	Tactics, techniques, and procedures
VBIED	Vehicle-borne improvised explosive device
WfF	Warfighters' forum

1. SPECIFIC AIMS AND RESEARCH QUESTIONS

INTRODUCTION

This research examined Knowledge Management Systems (KMS). It looked specifically at the KMS components, knowledge management (KM)¹, knowledge transfer (KT)², knowledge retention (KR)³, and knowledge utilization (KU)⁴ focusing on their relationship with knowledge gain and improved organizational performance.

Figure 1.1
Knowledge Management Systems Elements Structure



The intent of adopting and implementing specific KMS tools and delivery methods (refined inputs) within the four KMS elements is to expand or streamline an organization's ability to gain knowledge or improve performance (better outputs). However, unfocused, uneven, or improper adoption of tools or delivery methods from

¹ For this research, I used Conrad and Newman's (1999) definition of Knowledge Management, "a discipline that seeks to improve the performance of individuals and organizations by maintaining and leveraging the present and future value of knowledge assets. Knowledge management systems encompass both human and automated activities and their associated artifacts."

² For this research I used Argote and Ingram's (2000) definition of Knowledge Transfer, "... [the] process through which one unit (e.g., group, department, or division) is affected by the experience of another ... [and that] manifests itself through changes in the knowledge or performance of the recipient units."

³ For this research, I used Conrad and Newman's (1999) definition of Knowledge Retention "This includes all activities that preserve knowledge and allow it to remain in the system once introduced. It also includes those activities that maintain the viability of knowledge within the system."

myriad possibilities within KMS, may result in minimal gains or may even be detrimental to an organization's institutional knowledge or business performance.⁵ Therefore, the desire to adopt and implement new knowledge tools or delivery methods must be weighed carefully against the potential risks and rewards that may result. This dissertation examined a cross-section of knowledge tools that shed light on a method to synthesize lessons learned, and the ways in which information is delivered to supervisors, subordinates, and teams within organizations to foster knowledge gain and improved performance. Knowledge tools can be categorized broadly into two knowledge management and transfer methods: the "pull" method – characterized by data being available in a repository for individuals or teams to find and extract or "pull" out for use, and the "push" method – characterized by data being consolidated, prioritized, and pushed to individuals or teams. This dissertation empirically assessed individual-level knowledge gain and unit-level performance associated with a push and an adaptive-push⁶ method of knowledge transfer.

BROAD POLICY ISSUE AND POLICY QUESTIONS

This section starts by providing a look at the broad policy issue and then progresses through successively more specific policy and research questions. This process was used to identify the specific questions this dissertation directly and indirectly addressed.

The overarching policy issue addressed was *organizational performance*.

⁴ For this research, I used Conrad and Newman's definition of Knowledge Utilization, "... the activities and events connected with the application of knowledge to business processes."

⁵ Malhotra (2005) highlights four business examples of the use of a specific KMS tool, real time enterprise (RTE), where businesses use technology to enable response to specific "event" information in near real-time to allow managers to make and execute time-critical informed decisions. Malhotra highlights that Walmart, Dell, and General Electric were able to leverage these real-time data transfer tools for positive outcomes and increased performance, whereas, the real-time data transfer at Cisco and Enron provided a sense of overconfidence in predictive business models at Cisco and in the online market exchange at Enron that led to heavy losses for the former and bankruptcy for the latter.

⁶ Adaptive-push is a method by which the users (pullers) of knowledge interact with the providers (pushers) of knowledge in an iterative fashion to synthesize, shape, and prioritize the resulting information pushed to users. The belief is that knowledge pushed to users that is developed in this manner, may result in increased individual learning and organizational performance.

The policy question was: *Can KMS help organizations achieve increased performance?*

This dissertation answered this policy question by identifying and answering hierarchical levels of linked research questions. Answers to macro (highest) level research questions were obtained indirectly by answering micro (lowest) level research questions using data collected from U.S. Army soldiers and teams in conjunction with the Stryker Warfighters' Forum (SWfF) knowledge repository assessment. The objective was to develop a hierarchy of questions that would allow the research to address specific, empirically answerable questions that could then be generalized to provide insights at a higher level and ideally for similar organizations. The following three levels of questions (in order from highest to lowest) drove the development of the specific research questions and are displayed in matrix form in Table 1.1.

Level 1 questions:

- 1a. Can KMS benefit an organization?
- 1b. Do different methods of knowledge transfer affect the benefit received by members of the organization?
- 1c. What are the implications of differing benefits from KT for developing a KMS tool?

Level 2 questions:

- 2a. What does previous research, theory, and/or application of KMS say about best practices for maintaining and leveraging KT systems?
- 2b. If an organization, similar to SWfF, varies the KT method(s), will it affect the benefit received?
- 2c. What are the implications of varying KT methods for building a KMS tool for an organization?

Level 3 questions:

- 3a. Has the US Army's Stryker Warfighters' Forum (SWfF) developed in a way that the literature would suggest would benefit the customer?
- 3b. What KT methods are the SWfF employing and which ways might work better than others?

3c. What are the implications of the answers to 3b in shaping training tools for SWfF and other warfighters’ forums (WfF)?

Table 1.1
Hierarchical (theoretical, organizational, and SWfF) Levels of Policy and Research Questions

	Literature & Historical Precedent	Will KT Methods affect Benefit Received?	What are implications for organizations?
Theoretical (Abstract) Level	Can KMS Benefit an Organization?	Do different methods of knowledge transfer affect the benefit received by members of the organization?	What are implications of differing benefits from KT for developing a KMS tool?
Organizational Level	What does previous research, theory, and/or application, of KMS say about best practices for maintaining and leveraging KT systems in organizations?	If an organization similar to SWfF varies the KT method(s), will it affect the benefit received?	What are the implications of varying KT methods for building a KMS tool for an organization?
Stryker Warfighters' Forum Level	Has the U.S. Army's Stryker Warfighters' Forum (SWfF) developed in a way that the literature would suggest would benefit the customer?	What KT method(s) is SWfF employing and which ways might work better than others?	What are the implications of the SWfF employment methods (3b) in shaping training tools for SWfF and other WfFs?

The SWfF organization, like most knowledge organizations, uses multiple knowledge management tools to manage and transfer knowledge. This research specifically examined two knowledge tools delivered to leaders and their teams. The first was an existing tool currently offered by the SWfF. The second was a tool developed and disseminated by a RAND team that could be continued in the future by the SWfF. The first tool was an example of a push delivery method and the second tool was an example of an adaptive-push methodology within the KMS domain. Although Stryker leaders often voice their support for the value of the SWfF in helping units prepare for deployments, there is no known empirical research to validate if any of the specific tools

SWfF provided, positively affected a soldier's gain in knowledge or a unit's improved performance.⁷

While there has been no specific empirical study of SWfF to date, previous studies provided conflicting evidence regarding expected outcomes. Two previous studies suggested that delivery methods could be affected by the conditions in which they were delivered. Research that compared outcomes from self-paced vs. didactic lecture style learning within organizations (Schlomer, Anderson and Shaw, 1997) and the role of knowledge repositories that affected knowledge transfer suggested that push vs. pull methods offered mixed results in organizations depending on execution conditions (Davenport, 1998). In a pretest/posttest design study by Schlomer, Anderson, and Shaw (1997) no statistically significant differences in KR outcomes were observed between nurses using a written self-learning module (pull) or a didactic lecture module (push) for KT. Davenport, De Long, and Beers (1998) found that knowledge repositories that were actively catalogued and pruned by dedicated knowledge managers contributed in a positive way to outcomes as reported by users and contributors within the organizations they studied.

My research on SWfF tools extended the work of previous studies of push vs. pull KT methods by assessing if outcomes based upon changes in individual knowledge gained when push methods were used and if collective unit-level skills proficiency increased when adaptive-push methods were implemented. This research used elements of KR and KU as dependent variables to test the hypothesis that push methods associated with KMS tools would improve individual knowledge gain and unit-level performance and therefore improve a unit's deployment performance.

SWFF POLICY ISSUE, POLICY QUESTIONS, AND RESEARCH QUESTIONS

The specific policy issue addressed was the proficiency of *Stryker brigade counterinsurgency performance*.

The policy questions were: *Can KMS tools improve Stryker soldier knowledge and small unit skills for counterinsurgency operations?*

⁷ This assertion is supported by the Army's request to have RAND conduct an empirical assessment of the SWfF.

To answer these policy questions, my three primary research questions were:

1) *What were the currently accepted KMS delivery best practices as defined by knowledge management theory, research, and application in the military and civilian sector?*

2) *Does the delivery mode of a Knowledge Management System affect the benefit received by individual and collective knowledge users?*

3) *How should the Army's KMS approach change?*

SPECIFIC AIMS AND DESIRED OUTCOMES OF KMS RESEARCH

A qualitative review of the research from civilian and military literature, manuals, doctrine, and analyses was conducted in order to assess how well various knowledge domain tools and techniques could improve soldier knowledge and unit performance. The review suggested that push, and the interaction between pull and push in delivering training tools was gaining support among researchers. This caused me to look at SWfF tools to evaluate which used push delivery and focus my research on these tools. The assessment of SWfF tools that used KMS push delivery modes allowed me to assess the value of the delivery method in transferring knowledge. This assessment of the push and adaptive-push knowledge delivery modes is the heart of this dissertation. . I used one existing SWfF tool and one RAND-developed tool to complete the research. The SWfF tools and delivery methods examined were:

a) *SWfF leader decision-making training tools (individual-level, push method)*

b) *Iraq Common Event Approaches handbook (unit-level, adaptive-push method)*

The results from this research could support practitioners' and decision makers' selection of tools and delivery methods for use by WfFs and similar organizations.

The desired end state is that senior Army leaders have better information about the value of knowledge delivery methods in achieving knowledge gains at the individual level. Additionally, in the SWfF context, Army leaders will have more information to support their decisions about how to develop a new, or modify an existing WfF or similar program to improve knowledge acquisition at the individual level and improve performance outcomes at the collective level. This combination of individual knowledge gain and improved unit performance could ultimately enhance the performance of

leaders, their teams, and their units. The study results could also be applied beyond the military for organizations with similar business models.⁸ Organizations that habitually incorporate lessons learned or rely on customer feedback to enhance product development and delivery are some examples of those that could benefit from this research.⁹

⁸ Organizations such as firefighters, police, paramedics, and emergency/disaster responders that prepare for and conduct operations in which an adversary or the environment routinely changes the operating circumstances will benefit from these results. Groups that necessitate that lessons learned knowledge for conducting operations be transferred nearly instantaneously to prepare follow-on units to better perform in similar circumstances are the ideal organizations. However, any organization that competes with other organizations in the marketplace on quality, price, or customer loyalty can also benefit from improvement in their KT processes associated with the results of this study.

⁹ The health profession could also apply and benefit from the techniques used in this research. For example, medical professionals could be asked to complete a survey that describes how patient symptoms changed as a function of various treatments.

2. BACKGROUND, SIGNIFICANCE, MOTIVATION, AND LITERATURE REVIEW

This chapter provides the reader an understanding of how changes within and outside of the Army led to the creation of SWfF and the need to determine the effectiveness of KMS methods that SWfF could use. First, I outline the changes that took place in the Army's power projection planning that led to the adoption of the Stryker combat vehicle and the creation of the Stryker brigade combat teams (SBCT). Then I present how the focus of the resulting SBCTs was reoriented to conduct stability and counterinsurgency operations. All of these factors contributed to the need to develop the SWfF to serve as the knowledge clearing house for Stryker lessons learned and training tools. The request to conduct an assessment of SWfF tools provided the opportunity and resources to focus my research on the push and adaptive-push knowledge transfer tools that are at the heart of this dissertation. The Army's existing lessons learned system, a core component of SWfF's mission, may not be the best means to transfer knowledge. The SWfF and the Stryker soldiers that use the SWfF provided the context and the vehicle for my research to assess these knowledge transfer tools and provide results for the benefit of SWfF, the Army, and others interested in KMS.

A brief history of the SWfF is followed by an Army senior leader rationale for assessing the value-added of SWfF and its tools in preparing soldiers and units for deployment to conduct contingency operations. I then discussed how the experience that soldiers amass while deployed is currently underutilized in terms of preparing soldiers for future deployments, and that using KMS might be better means of converting deployment experience into knowledge. I then foreshadowed the key finding of this research, that the adaptive-push knowledge transfer method could be a better way to capture, synthesize, and transfer this knowledge within a dynamic organization. The final section in this chapter is my summarization of a review of the KMS and learning theory literature that suggested that the push and adaptive-push delivery of information could lead to improvements in knowledge transfer.

ARMY'S SUCCESS WITH MAJOR COMBAT OPERATIONS

During the past 25 years, the United States Army made great strides in fielding armored combat vehicles and honing skills necessary to win in major combat operations (MCO). The tactical use of these armored vehicles and skills was taught at institutional schools, trained at home station¹⁰, and validated at Combat Training Centers (CTCs).¹¹ The National Training Center was the first of the CTCs established as part of the Army's training revolution (Chapman, 1991) and employed a top down push system of knowledge delivery. The United States Army dedicated significant resources to the development and institutionalization of doctrine, equipment, organizations, and the training of tactics, techniques, and procedures (TTPs)¹² associated with these heavy-armored vehicles necessary to win wars in high-intensity conflict environments. The culmination of this training cycle was a training and validation process whereby platoon¹³-, company¹⁴-, battalion¹⁵- and brigade¹⁶-level units deployed for about 30 days

¹⁰ Home station is a soldier's place of assignment. It is generally where individual and small unit training is conducted. When soldiers are at home station they generally return to their homes in the evenings except during quarterly or semi-annual field training where they would remain overnight in a local training area usually for a duration of two weeks or less.

¹¹ The Army has three ground maneuver combat training centers located in California (The National Training Center), Louisiana (the Joint Readiness Training Center), and Germany (the Combat Maneuver Training Center). These three centers are staffed with U.S. Army units and civilian augmentees that replicate enemy units and fight using enemy tactics. Army units conduct at least biannual deployments to a combat training center to hone skills and receive feedback from dedicated observer/controllers (NTC) or trainers/mentors (JRTC). Additionally, while the U.S. Army is involved with contingency operations, units conduct deployments to CTC's at the culmination of their training preparations to conduct mission rehearsal exercises to validate/confirm deployment readiness immediately prior to overseas deployment.

¹² TTPs are generally a non-codified list of activities or set of procedures that are learned by soldiers through training and experience that provide methods for responding militarily to specific stimuli or environmental or enemy actions.

¹³ A platoon is a small unit comprised of 30-40 soldiers. It is generally led by a commissioned officer (platoon leader - 2nd Lieutenant or 1st Lieutenant) and supported by a senior noncommissioned officer with about 8-14 years of experience (Sergeant First Class). The platoon has three subordinate elements of 10-12 soldiers that are called squads. The squad is led by a noncommissioned officer (usually a staff sergeant).

¹⁴ A company is a small unit generally comprised of between 60-180 soldiers. It is commanded by a commissioned officer with about 6-9 years of experience (company commander - Captain) and supported by a senior enlisted member with about 14-20 years of experience (First Sergeant). The company generally has three or four subordinate elements called platoons.

¹⁵ A battalion is a mid-sized unit generally comprised of between 300-800 soldiers. It is commanded by a commissioned officer with about 15-19 years of experience (battalion commander - Lieutenant Colonel) and supported by a senior enlisted member with about 20-28 years of experience

to a CTC to conduct realistic major combat operations under simulated combat conditions. These training centers were credited with the Army's overwhelming success during MCO in Operation Desert Shield/Desert Storm, and later during the initial ground combat phase of operations during Operation Iraqi Freedom. The sequence of home station training models, followed by CTC validation, had indeed proved its value in preparing units to conduct MCO using conventional armored combat vehicles.

COUNTERINSURGENCY AND STABILITY OPERATIONS BECOME THE NORM

Since September 11, 2001, the Army has found itself fighting different kinds of operations in which MCO was only the first phase often followed by stability and counterinsurgency phases. In light of the changing operational nature of warfare, the Army published its updated FM 3-0 Operations manual in 2008, radically changing its doctrine by elevating stability and civil support operations to equal status with offensive and defensive operations (Army, 2008a). Stability Operations are defined as:

[Stability operations encompass] various military missions, tasks, and activities conducted outside the United States in coordination with other instruments of national power to maintain or reestablish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief.

(JP 3-0)¹⁷

Counterinsurgency operations are a subset of stability operations used in instances where insurgent forces are using violence to threaten local governance through guerrilla tactics and terrorism. Counterinsurgency (COIN) operations are defined in Army Field Manual FM 3-24 as "Those military, paramilitary, political, economic, psychological,

(Command Sergeant Major). The battalion generally has three to six subordinate elements called companies.

¹⁶ A brigade is a large unit generally comprised of between 3500 and 5000 soldiers. It is commanded by a commissioned officer with about 21-25 years of experience (brigade commander - Colonel) and supported by a senior enlisted member with about 24-30 years of experience (Command Sergeant Major). The brigade generally has four to six subordinate elements called battalions.

¹⁷ United States Department of the Army, "FM 3-07 Stability Operations," ed. HQDA (Washington DC: U.S. Army, 2008b).

and civic actions taken by a government to defeat insurgency” (this definition is the same used by the Joint Publication 1-02), (Army, 2006). The United States and its coalition partners are currently fighting a protracted counterinsurgency operation in Iraq and Afghanistan.

THE ARMY TRANSITIONS TO A NEW VEHICLE – STRYKER - AND ESTABLISHES SWFF

The Army leadership decided that a lighter, more deployable, armored vehicle was necessary to bridge a gap between the “light” initial entry divisions (e.g. 82nd Airborne [ABN], and 10TH Mountain [MTN]) and the heavy-armored units that are slow to deploy (West-Point.org, 2002). The interim brigade combat team was to fill this void until the Future Combat System (FCS) could be fielded (West-Point.org, 2002). The intent of the interim brigade was to provide faster deployability by air and increased speed, lethality, and protection once in theater, while reducing the logistical burden on the force. The Stryker vehicle was selected as the major weapon platform of the interim brigade and the BCT became known as the Stryker Brigade Combat team (SBCT). The Army Field Manual 21.21 was soon published that defined the mission, intent, and training expectations for this new brigade type (Army, 2003). In conjunction with this change, the Army created a brigade coordination cell to help in the transformation process. This cell later became the SWfF whose history and mission will be detailed in the next section.

Soon after the development of the SBCT¹⁸, the terrorist attacks of September 11, 2001 occurred and the Army found itself fighting a relatively short MCO followed by protracted stability and counterinsurgency (COIN) operations in Afghanistan and Iraq. These new Stryker vehicles in new formations were redirected in their focus to preparing for stability operations and fighting counterinsurgencies. This change in focus for the Stryker units required an entire paradigm shift in developing tactics, techniques, and procedures. These TTPs could no longer be geared toward exploiting the speed and

¹⁸ The initial brigades that converted to SBCTs included both light and heavy types. As such, these new SBCTs did not have an ingrained unit-centric training paradigm to overcome as they transitioned to COIN and stability operations. In a sense, the SBCTs had not established their cultural identity yet which eased the transition somewhat.

situational awareness afforded by the wheeled Stryker vehicle and advanced communication systems in MCO, but instead required the SBCTs to operate in urban environments conducting COIN operations. In effect, this change nullified the perceived strengths of the Stryker vehicle and SBCTs. Additionally, traditional unit-centric training methodologies were proving insufficient to prepare units for the ever-evolving dynamic requirements of current COIN fights. Units were forced to undergo “a lot of ‘on the job training’ in Iraq” (Gonzales et al., 2007) as a result of the constantly changing TTPs. Despite changes to home-station training, units have struggled to keep pace with the tactics of the highly adaptive insurgent enemy (Gonzales et al., 2007). These dynamic training needs were driving the Army “toward a more networked and collaborative training system facilitated by modern communication technology (SWfF, 2007c).

To support the development and dissemination of these new tactics, techniques, procedures, lessons learned, leader development tools, and a more networked, collaborative training system; the Army leadership established what has now become known as the Stryker Warfighters’ Forum.¹⁹ This forum was designed to support knowledge sharing and peer-to-peer learning through networked communities of practice. These changes have resulted in a new home-station training paradigm (SWfF, 2007c). The SWfF, located at Fort Lewis, Washington, is focused on supporting SBCTs and was the first of three Warfighting Forums (WfFs) to be established. The other two are focused on supporting heavy brigade combat teams through the Heavy Brigade Combat Team Warfighting Forum (HWfF) located at Fort Hood, Texas and infantry brigade combat teams through the Infantry Brigade Combat Team Warfighting Forum (IWfF), located at Fort Bragg, North Carolina (SWfF, 2007b).

The warfighting forums viewed their establishment as a major shift in the Army’s acceptance and adoption of knowledge management and collaboration into leader, leader team, and unit training practices (SWfF, 2007b). Empirical confirmation of the WfF’s contribution to learning would provide support for these claims.

¹⁹ The Stryker Warfighting Forum’s Strykernet website is AKO password protected. It is located at <https://strykernet.army.mil/default.aspx> as of 15 May 2009. The IWfF is also AKO password protected and located at <https://www.benning.army.mil/TCM-IBCT-CCMS/content/forum.htm> as of 15 May 2009.

SWFF HISTORY, MISSION, AND SUPPORTING TASKS

The seeds for the SWfF organization trace back to 1999 with the establishment of the brigade coordination cell that was stood up to help the transformation to SBCTs. The brigade coordination cell included over 90 personnel from a range of offices and was responsible for all facets of establishing a new organization (a much broader mission than exists in SWfF today).²⁰ The Stryker Center for Lessons Learned^{21,22} the commanding general's initiatives group²³, and the Stryker University concept²⁴ followed. According to the SWfF Operation's Officer COL (Ret) Rich Kaiura, "the SWfF²⁵ originated from the commanding general's initiatives group and the Stryker University Initiative."²⁶ The mission of SWfF according to the organization's charter is:

To enhance BCT leader, leader team, and unit training throughout the Army Force Generation (ARFORGEN) process, to include the incorporation of lesson's being learned by all BCTs, in order for BCTs to perform at higher

²⁰ Email correspondence titled "SWfF – History" sent from Fort Lewis, WA. by COL (Ret) Richard Kaiura, November 10 2008b. to COL S. Jamie Gayton, pg 1.

²¹ The Stryker Center for Lessons Learned (SCLL) was a BCTC think tank initiative involving SAIC contractors started by site manager Matt McCarthy Ibid. to collect Stryker lessons learned and engage in dialogue about emerging Stryker practices as described in *Chronology: Stryker University, Warrior Training and Leader Development Center-Stryker, and Stryker Brigade Combat Team Warfighters' Forum*. COL (ret) Richard Kaiura, MS word document on DVD, November 2, 2008 2008a.

²² The SCLL established the Strykernet to collect and share near real-time knowledge it was amassing. Within months after creation, it was being recognized as an innovator in KM implementation and was acknowledged as such by earning The Department of the Army's 2005 KM award for best Community of Practice SWfF, "Stryker Brigade Combat Team (SBCT) Warfighters' Forum Concept Plan (Draft - Revised Version)," (2007c). pg 5.

²³ The commanding general's initiatives group largely consisted of three former SBCT commanders that were integrated into the collaborative effort between the Stryker University concept and the SCLL Kaiura.

²⁴ The Stryker University was established by LTG Dubick, then Commanding General of I Corps, using uniformed military, with the mission statement that read "Collaboratively develop a plan and coordinate a responsive process to train all Army SBCTs, individual, leader, and warfighting (collective/BOS) skills consistent with the ARFORGEN process and the Army's way ahead for generating forces" in the Stryker University Concept Development draft working slides as of May 25, 2006 Concept Development Team Stryker University, *Stryker University Concept Development: Creating Excellence for Training and Leader Development in America's Stryker Brigade Combat Teams* (Fort Lewis, WA: 2006), Draft Working Slides.

²⁵ SWfF was originally called the Warrior Training and Leader Development Center-Stryker. The name was formally changed in 2007 to SWfF, the Stryker Warfighters' Forum.

²⁶ Email correspondence titled "SWfF – History" sent from Fort Lewis, WA. by COL (Ret) Richard Kaiura, November 10, 2008b. to COL S. Jamie Gayton, pg 1.

levels of mission proficiency in each subsequent deployment; and to serve as conduits of BCT operational experience for training, doctrine, and force design and as models for other Army training and leader initiatives.²⁷

SWfFs supporting tasks to achieve this mission are defined as:²⁸

1. Develop and sustain a repository of experience and expertise in SBCT community.
2. Create a Community of Practice among SBCTs, home stations, and the institutional Army.
3. Use a collaborative, distributive²⁹, continuous learning methodology that is operationally based.
4. Recommend applicability for modular brigades and possible prototype EBCT.
5. Adjust concept and evolve as new opportunities and technologies arise.
6. Enhance the planning, coordination, integration, and facilitation of unit training and leader development, and leverage the community of practice to marshal resources from across DoD, the Interagency, academia, and state and local; agencies to support home station unit needs.
7. Incorporate lessons learned from all SBCTs.
8. Act as an advocate for the seven SBCTs and monitor integration of DOTLMPF in SBCT formations.

As can be seen by the mission and supporting tasks, central to this organization's charter is that this new SWfF organization was focused on "collecting and sharing observations, insights, lessons and innovations from SBCTs" (SWfF, 2007b) in order to

²⁷ General Griffin, General Wallace, and General Campbell "General's Charter: SWfF, IWfF, HWfF," (2007). pg 1

²⁸ Supporting tasks were found in SWfF, "Fort Lewis Stryker Brigade Combat Team Warfighters' Forum Concept Plan," (Fort Lewis, WA: U.S. Army, 2007b).

²⁹ Distributed learning defined as "an instructional model that allows instructor, students, and content to be located in different, non-centralized locations so that instruction and learning occur independent of time and place. . . . The distributed learning model can be used in combination with traditional classroom-based courses, with traditional distance learning courses, or it can be used to create wholly virtual classrooms." Quoting from a Saltzberg, Polyson syllabus, 1995, by James L. Morrison and Badrul H. Khan, "The Global E-Learning Framework: An Interview with Badrul Khan," The Technology Source Archives at the University of North Carolina, http://technologysource.org/article/global_elearning_framework/ (as of May 15, 2009).

establish a knowledge repository of experience and expertise that could integrate lessons learned and TTPs from the institutional Army, combat training centers, and operational units (SWfF, 2007b). The organization's focus was on enhancing Knowledge Management Systems including KT, KR, and KU within the SBCT community.

SWFF OVERSIGHT³⁰, DIRECTION, AND A DESIRE FOR ASSESSMENT/VALIDATION

This initiative [Warfighters' Forums] shows the potential for exponential growth. The Warfighters' Forums will revolutionize the way we train, prepare for war, and adapt our practices to cope with dynamic change.

GEN Charles C. Campbell
FORSCOM CDR
WfF web page³¹,
September, 2008

This quote by the Forces Command (FORSCOM) Commander, General Charles C. Campbell, highlights the excitement and exuberance that leaders were showing for the possibilities that the Warfighting Forum concept offered. However, this general officer steering committee (GOSC) and commanding generals also recognized that an external empirical assessment of the concept was necessary to ensure its sustainability. This recognition was the genesis of the idea to empirically evaluate the value of this new SWfF program. The I Corps and SWfF were directed to "conduct a prototype program to demonstrate attainable levels of proficiency, focusing on an SBCT [unit identification removed] that was between overseas rotations" (SWfF, 2007b). It was this request for evaluation of the SWfF program that resulted in the Army requesting that the RAND Corporation complete a study entitled "Assessment of Stryker Brigade Warfighting

³⁰ Oversight for all three WfFs, the SWfF, HWfF, and IWfF, is jointly conducted by the commanding generals of Training and Doctrine Command (TRADOC), FORSCOM, and the Army Materiel Command (AMC). For SBCT specific issues, the commanding generals receive guidance from a (GOSC) composed of the I Corps commander, the Combined Arms Center Commander, and Deputy Commanders from FORSCOM and AMC. SWfF, "Stryker Brigade Combat Team (SBCT) Warfighters' Forum Concept Plan (Draft - Revised Version)." pg 5.

³¹ Army Warfighting Forum web page, <https://www.us.army.mil/suite/portal/index.jsp>, accessed on 9 September 2008.

Center Prototype Training Program.” The objective of the study was to, “Assess changes in leader and unit proficiency under the U. S. Army Stryker Brigade Combat Team (SBCT) Warfighting Center, as shown by the experience of a brigade’s one-year reset/training and ready periods during its ARFORGEN³² cycle (SWfF, 2007a).” As the research protocol was established and assessment tools were developed, it became clear that underlying this assessment of SWfF tools that could influence leader and unit proficiency, was a larger issue of how these training tools should be developed (KM) and how they should be disseminated (KT): push, pull, or adaptive-push. This dissertation is the result of the author’s participation in this RAND study and the desire to extend the research to answer questions about KM, KT, KR, and KU and specifically about the effect of delivery methods on soldier knowledge and unit performance.

SWfF validation significance

SWfF has already received positive reviews from the U.S. Army for its revolutionary innovations³³ (SWfF, 2007b); however, Army leaders wanted to see if there were empirically measured outcomes that were directly attributable to the SWfF organization and its available training tools. Determining if there were empirical relationships between SWfF usage and outcomes was the driving force behind this research. The results could be used at three levels: tactical, operational, and strategic. At the hands-on tactical level, the findings could help to inform the SWfF staff if and how well current and potential components of their program work. This information could be used by SWfF staff to refocus their available resources to develop or refine training tools. At the operational level, the results could provide the I Corps Commanding General, the general officer steering committee comprised of the commanding generals (CGs) of Training and Doctrine Command (TRADOC), FORSCOM, and Army Materiel Command (AMC) with information about how SWfF best can support units during the Army force generation cycle. Such information could support these senior leaders’ decisions about whether to maintain the current SWfF

³² Army Forces Generation model.

program focus and size, or to change the focus and increase or decrease the size of the resource allocation. In the expectation of increasingly tight budgets in the years ahead, empirical evidence of the impact of SWfF could be critical during the allocation of budgetary resources. Finally, at the strategic level, the research could provide the commanding generals of TRADOC, FORSCOM, and AMC empirically-driven results reflecting the value of these knowledge tools that they could generalize to make decisions regarding the SWfF, HWfF, IWfF and other Army organizations. They would have results from this assessment of the value of currently available push knowledge delivery tools on soldier knowledge gains and for potentially available knowledge tools using adaptive push delivery on unit performance.

THE ARMY NEEDS A BETTER METHOD TO CAPTURE UNTAPPED EXPERIENCE

Units have limited time to prepare for future deployments

Since September 11, 2001, the Army's deployment tempo has steadily increased and only recently, in 2009, has it subsided slightly. Following the initial deployments to Iraq by the 3rd Infantry Division, active duty soldiers were deploying for about 12 months and achieving the Army's goal of 24 months of "dwell time"³⁴ (Davis, 2005) before deploying again. As combat operations intensified and more brigades were deployed overseas for 12 months dwell time shrank to less than 12 months. The ratio of deployed time to dwell time again changed with the Army's requirement to surge additional units into Iraq in 2006 and 2007 leading to deployment tours of 15 months and 12 month dwell times. However, the DoD goal for active duty soldiers is 12 months deployed and 24 months at home station (House of Representatives, 2007). This sustained dwell time shortfall has led to a competition between family and professional needs for the time that is available. The Army's goal during dwell time is to provide the quantity and quality of professional military education, home station training, new equipment familiarization,

³³ The Department of the Army Presented the SCLL with its 2005 Knowledge Management Award for Best Community of Practice and in 2006 presented a similar award for its contributions to battle command.

³⁴ Dwell time is the amount of time a soldier is located at his assigned duty location, uninterrupted by deployments or extended duty away from home.

and combat simulation validation at combat training centers that will ensure a soldier's preparedness for combat. The short duration training deployments associated with these ARFORGEN activities and professional Army schools limits the quantity and quality of time available for other activities including family time. The competing, and completely understandable interests of families are to maximize the quantity and quality of family time while the soldiers are at home. These two competing pressures for the same available time led the Army to a renewed desire to develop training methods that would accomplish the same level of training readiness in less time or higher levels of training readiness in the same time.

The expertise developed during deployments is an untapped pool of knowledge to train soldiers that is not effectively utilized today

The current unit deployment cycle consists of six to eight months of training which includes individual training, small unit collective training (squads and platoons), followed by company, battalion, and sometimes brigade collective training at home station. This training is followed by a 12 or 15 month deployment. Throughout this process, soldiers hone and refine their drills and procedures for handling events so that by the time they redeploy to home-station, they have established their best practices and have extensive knowledge that could and should be transferred into information for those preparing for deployment. The Army could more effectively and efficiently capitalize on this resource.

A typical knowledge transfer process following deployment occurs when soldiers ask other soldiers who have recently redeployed to provide deployment specific information. Even when this very informal communication is successful, knowledge is only transferred to one soldier. The current lessons learned mechanism is only slightly better. This mechanism that establishes a repository of information available for soldiers to "pull" from is generally unfocused and un-aggregated resulting in, at best, one soldier pulling from many unfocused sources (one from many). In the early stages of a conflict, when there are few lessons available, this system can be productive. However, as the Army accumulates experiences and starts to see changes in tactics, techniques, and procedures and then doctrine, the sheer volume of material, particularly dated material,

can be difficult to sift through to find relevant material. Contrast these two models with an adaptive-push model whereby deployment best practices could be systematically collected from many soldiers on focused topics following deployments and then pushed to soldiers preparing for the next deployment (many to many). The latter model might be a better mechanism to help soldiers systematically convert this experience to knowledge and keep the information fresh and relevant.

The Army should first capture this knowledge that is embodied in soldiers returning from deployment operations and convert it to information. The Army should then develop a systematic delivery mechanism that will allow deploying soldiers the best opportunity to turn this information back into knowledge prior to their deployment.

KMS could be a method to systematically capture, synthesize, and transfer information to soldiers

Soldiers and leaders are often asked to provide an after action review (AAR),³⁵ following missions or deployments, however, there is generally little guidance provided on specific topics to address (no interaction with those who might pull this information – not “adaptive”) and there is no systematic mechanism to routinely push this information to potential users (no systematic push). Developing an adaptive-push mechanism may help incorporate the specific needs of the soldiers preparing for deployment (pullers) into the knowledge capture, synthesis, and transition to information process so that relevant, desired information can be pushed to soldiers in a systematic way as they prepare for deployment. This adaptive-push process may also make training more efficient and more effective, reducing some of the tension on the competing priorities for a soldier’s dwell time – duty to unit and obligation to family.

LITERATURE REVIEW - KNOWLEDGE MANAGEMENT SYSTEMS

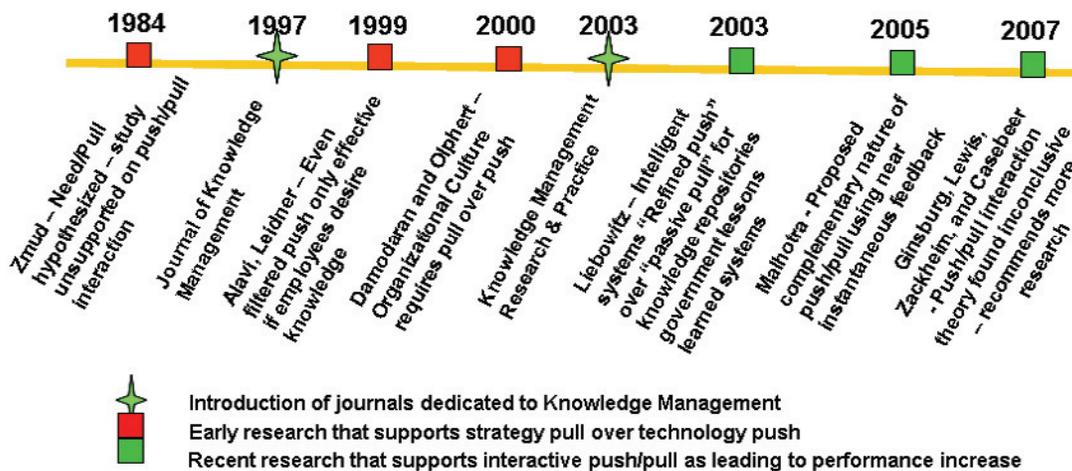
Early KMS research conducted was not organized

Early research addressing how to manage data, information, and knowledge topics was found in a broad spectrum of journals representing multiple disciplines. In 1997,

³⁵ An AAR is a feedback mechanism whereby soldiers who have experienced an event or conducted a mission reflect on all stages of the execution of the mission with a goal of highlighting strengths and weaknesses to improve performance during future missions. The Army training circular that references the AAR is TC 25-20, A Leader’s Guide to After-Action Reviews. For more information see United States Department of the Army, "TC 25-20 a Leader's Guide to after-Action Reviews," ed. HQDA (Washington DC: 1993).

The *Journal of Knowledge Management* published its first issue, helping to focus the research and promote the knowledge management concept as a separate field that warranted a dedicated research stream. *The Knowledge and Process Management Journal* followed shortly after in 1999, and *Knowledge Management and Research Practice* followed in 2003.

Figure 2.1
Chronology of Knowledge Management Gaining Traction as a Research Field



Each journal represented a step toward legitimacy for a new off-shoot field that had roots across a wide range of disciplines. A fundamental question that initial research into data, information, and knowledge transfer often focused on was whether strategy pull³⁶ or technology push³⁷ had a higher probability of increasing organizational performance.

Early KMS research suggests knowledge transfer via “pull” has higher probability of increasing performance

In early research by Zmud, published in *Management Science* in 1984, he stated, “that ‘need-pull’ innovations have been found to be characterized by higher probabilities for commercial success than have ‘technology-push innovations’” (Zmud, 1984). He

³⁶ Strategy pull – method of knowledge transfer where individuals at lower levels of organizations identify need for specific data, information or knowledge and then search for and incorporate what they find to improve their organization’s performance.

³⁷ Technology push – method of knowledge transfer where individuals at higher levels of organizations determined what data, information, or knowledge is necessary at lower levels to increase organizational performance and then provide mechanisms to deliver it.

tested this theory using six hypotheses. One of his hypotheses, that he titled the 'interaction effect' described that, "Innovation will occur most often when a need and a means for resolving this need are simultaneously recognized" (Zmud, 1984). He tested this interaction by collecting survey data from 47 software development managers about the adoption of six software practices. He collected use data as a proxy for 'means' and complexity (which inferred performance gap which inferred need) as a surrogate for need. Regression analyses did not support his main hypothesis, however he was encouraged by a subset of his study that had statistically significant results for the 'need-pull' interaction. Additionally, his sixth hypothesis (3a), group receptivity to change ('need-pull') had statistically significant results. These conclusions that generally supported pull over push, with a minor result in favor of push-pull interaction set the stage for further research in this area.

Work by Alavi and Leidner (1999) supported the pull over push conclusion by highlighting that pushing (even filtered) information may not be effective KMS unless individuals are motivated to convert it to knowledge. In effect, the strategy pull component was necessary but potentially not sufficient to ensure knowledge transfer. Alavi and Leidner (1999) went on to quote Manville and Foote (1996) in summarizing this point, "Hence, knowledge is created and shared on the basis of 'pull' by individuals and not a centralized technology-enabled 'push' of information to desktops"(Alavi and Leidner, 1999). Damodaran and Olphert (2000) reached the same pull over push conclusion for a different reason; they cited organizational culture. Their study consisted of semi-structured interviews of stakeholders in electronic information management (EIM) systems within a large multinational research and technology services corporation.³⁸ Their questions focused on individuals' usage, experiences, and perceptions of the EIM system. A central finding of the study was, "This study also confirms the importance of cultural factors in achieving effective KM systems" (Damodaran and Olphert, 2000). They also commented that, "To achieve greater uptake of the EIM system will require technology 'pull' to be exerted by business and user needs" (Damodaran and Olphert, 2000).

My research that hypothesized that push and adaptive-push knowledge delivery methods would lead to knowledge gain and performance increase was not at odds with this research. Need-pull is an essential component of my push (consumers must be motivated to learn) and adaptive-push (consumers of information must interact with producers to provide relevant, timely information) KT methods. Despite findings of the primacy of pull KT methods, Zmud and Alavi and Leidner both commented on the potential value of interaction between push and pull. My research explored these ideas further.

Despite earlier research results, current scholarly thought continues to believe KMS knowledge transfer via interactive push-pull should be successful

More recent scholarly work suggested that knowledge transfer via interactive push-pull as complements may support increased learning, however, to date there has been little empirical research to test this hypothesis. Malhotra (2005) suggested that the traditional technology push model that is largely input/process driven may have outlasted its utility. He further reasoned that the strategy-pull model that is largely outcomes-driven appeared to be more aligned with knowledge management (Malhotra, 2005). Concluding this line of reasoning, he highlighted from Khosla and Pal's work in 2002 that there may be a complementary nature of technology-push and strategy-pull using near instantaneous information and response that could result in increased knowledge transfer (Malhotra, 2005). Ginsberg et al's (2007) Canadian Adverse Events study used the case study approach to assess knowledge translation that occurred during two web conferences and two forums. They coded 33 semi-structured interviews following the forums and conferences. They used template analysis to reach the conclusion that early and sustained interaction between pushers and pullers would improve research utilization. They made the recommendation that additional research should be conducted in this area (Ginsburg et al., 2007). My dissertation will continue this research stream that hypothesized the importance of push-pull interaction by empirically testing the push

³⁸ The name of the company was not disclosed, although it reportedly employed 1600 scientists in core locations and another 1100 in other operating units and plants (Damodaran and Olphert, 2000).

and adaptive-push KT methods and their effect on knowledge gain and organizational performance, respectively.

Research points toward active management of knowledge repositories to achieve performance improvement

A reason that organizations often suffer from data, information, and knowledge overload is when new elements are added to the existing database without some form of pruning or “active” management. Work by Davenport (1998) showed that active management and pruning of a knowledge repository can contribute in a positive way as described by users and contributors in the organization. Another study (Weber and Aha, 2003) highlighted the natural tendency for the military to use lessons learned systems as knowledge repositories. Lessons are *collected* from military personnel drawing on their experiences, *verified* by subject matter experts, *stored* in the repository, and then disseminated through multiple *distribution* methods, allowing reuse as necessary (Weber and Aha, 2003). The dissemination method, whether passive or active, for these lessons learned was the focus of much of their work. An example highlighted in recent government research (Liebowitz, 2003) cited that NASA maintains over 1300 lessons learned (including successes and failures) in its database accessible to employees. Liebowitz (2003) also cited a Weber and Aha (2002) research finding that, “70% of the lessons learned systems are ineffective due to passive analysis and dissemination.”

To counter identified weaknesses, Weber et al. (2003) are proponents of instituting intelligent systems³⁹ to transition organizations toward active analysis of information and more active rather than passive dissemination methods. Liebowitz sums up the progress in this lessons learned repository line of research by highlighting that NASA has developed an intelligent profiling system whereby users update a database with interests and activities and are then pushed links to relevant information (lessons learned) rather than depending on individuals finding information via the passive pull approach (Liebowitz, 2003). Liebowitz concluded by stating, “Ultimately, intelligent agent technology can be used to provide a refined push capability” (Liebowitz, 2003).

LITERATURE REVIEW – LEARNING THEORY

The focus of this research was on the use of KMS and specifically push and adaptive-push delivery of information to learners who otherwise would likely not seek out the information on their own. The focus was not about learning methods. However, individual learning components were aspects that underlie soldier education/learning so I highlighted two pertinent learning theories: Knowles' andragogy theory and Gagné's conditions of learning theory. Both may play a role in how a soldier learns during the push and adaptive-push knowledge transfer techniques. This dissertation focused on assessing the knowledge gained using push and unit performance associated with using adaptive-push KMS methods. It did not attempt to identify how or why individual soldiers learned or did not learn material. These questions go beyond the scope of this research and will be left for future research.

Knowles' theory of andragogy

Knowles' theory of adult education known as andragogy (Knowles, 1970, 1984),⁴⁰ provided a foundation for examining soldier learning. Knowles' andragogy theory defined adult learning by making the assumptions shown in Table 2.1.

Table 2.1
Four assumptions embedded within Knowles' andragogy theory⁴¹

1. Adults need to know why they need to learn something.
2. Adults need to learn experientially.
3. Adults approach learning as problem-solving.
4. Adults learn best when the topic is of immediate value.

Given these underlying assumptions of adult learning, the adaptive-push KT methodology could readily foster and improve learning. For example, using adaptive-push the provider of information can better explain the need to learn information, the information is pushed to the learner when most needed such as prior to training when

³⁹ Based upon the context, it appears that Weber et al. were using intelligent systems to include both cataloguing and "tagging" of information as well as more focused distribution of information. These concepts were elaborated on by Liebowitz and referenced later in the paragraph.

⁴⁰ The adult equivalent of pedagogy J. S. Atherton, "Learning and Teaching " <http://www.learningandteaching.info/learning/knowlesa.htm> (as of May 4, 2009).

⁴¹ Greg Kearsley, "Andragogy," <http://tip.psychology.org/knowles.html> (as of May 4, 2009).

they may be unsure of best practices, and the system still allows the learner to learn experientially during problem solving events. Additionally, andragogy has been used extensively for organizational training programs (Kearsley, 2009) which again was consistent with its application for modeling U.S. Army training programs.

Gagné's conditions of learning theory

Gagné's work on learning, including military training and learning, goes back to an article he wrote in 1962 titled, "Military Training and Principles of Learning," where he summarized that task analysis, principles of component task achievement, intratask transfer, and the sequencing of sub-task learning would provide ideas of greatest usefulness in the design of effective training (Gagné, 1962). He further opined that traditional learning principles like reinforcement, distribution of practice, and response familiarity would not offer much help in improving military training (Gagné, 1962).

Gagné's research suggested that learning tasks can be organized into a hierarchy according to complexity that also identifies prerequisites (Gagné, 1962). This stream of discussion posited, albeit without the ability to "refer to any well-organized body of experimental evidence for these newly proposed principles" (Gagné, 1962), that human tasks can be (1) analyzed into component tasks, (2) task components' presence leads to success on final tasks, and that (3) training design should identify component tasks, insure they are achieved, and sequence their learning to create optimal transfer (Gagné, 1962). This emphasis on the importance of task lists fits closely with current military training techniques for using short checklist-type summaries for units to identify/possess equipment, event execution lists, and common reports. A similar tasklist learning approach was incorporated in the Iraq Common Events Approaches handbook associated with research study II in Chapter 3.

This dissertation identified whether the delivery method impacted learning but not the underlying learning processes. However, the two aforementioned learning theories could offer some insights into how the method worked. Knowles' assumptions embedded within the andragogy theory are aligned closely with the pull elements of the adaptive-push theory. Soldiers and adults learn best when they: (1) know why, (2) learn experientially, (3) problem solve, and (4) understand the immediate value of the topic. These parallels could offer insights into why adaptive-push worked. Gagné's description

of task components that are sequential and hierarchical are similar to the push aspect of adaptive-push in that checklists were created and provided to soldiers whose units then performed better. Again, my research did not test why soldiers learned, but Gagné's and Knowles' learning theories offered insights into why these KT delivery methods may have achieved increased learning and organizational performance and could be explored in the future.

SUMMARY

In this chapter, I presented how a changing global landscape and the adoption of the SBCT in part led to the need for new dynamic network collaborative systems of learning. In addition, I posited that based on KMS literature and learning theory that push and adaptive-push methods could yield improvements in outcomes both at an individual- and unit-level. In the next chapter, I discuss the research and design methodology that I used to test the push and adaptive-push outcomes on performance.

3. RESEARCH DESIGN AND METHODS

RESEARCH DESIGN OVERVIEW

This research used two studies to assess the impact on Stryker soldier knowledge acquisition and unit performance of two tools, one that employed a push and one that employed an adaptive-push knowledge transfer method. The first study assessed a SWfF push KT method for KMS by measuring how an existing virtual, multi-media tactical training experience affects soldier and leader knowledge. The study used a pre- and post-treatment, paper and pencil assessment to measure gains in knowledge. The second study used a quasi-experimental field study to assess knowledge transfer using an adaptive-push methodology by providing a training handbook to units developed by synthesizing and incorporating recent combat returnee feedback and measuring the affect on unit performance. The treatment was the distribution of this study-developed handbook; the control groups did not receive the handbook.⁴²

RESEARCH HYPOTHESIS

The use of push and adaptive-push training delivery methods will improve soldier knowledge and improve unit performance.

STUDY I: RELATIONSHIP OF PUSH KT METHODS TO INDIVIDUAL-LEVEL KNOWLEDGE ACQUISITION

Participants – size, selection, and composition

The sample frame for this study included members from maneuver battalions within a Stryker Brigade Combat Team that had recently returned from Iraq. The samples were drawn from battalions that had completed their lifecycle manning post-

⁴² The handbook (treatment) was not withheld from the active duty Stryker Brigade. The handbook was not complete prior to the first SBCT conducting training at a CTC. The assessment cards were complete prior to the exercise so assessment data was collected on one SBCT that did not incorporate the handbook without any concerns that a potentially valuable treatment was intentionally withheld from these subjects. This is described in more detail later in the manuscript.

deployment reset phase⁴³ and their pre-deployment build phase.⁴⁴ This selection process ensured that the soldiers and leaders available for training represented a random selection of soldiers and leaders that would have normally participated in this type of training (that is, were in the process of conducting home station pre-deployment training). The SWfF assistant director solicited the leadership of battalions that met the above criteria regarding their potential interest in participating. Two of the six battalions solicited agreed to participate in the study. The leaders of these two battalions likely chose to participate based upon 1) an expectation of value-added from the SWfF training tool and 2) their unit's availability based upon its training calendar/schedule. In addition, battalions were told that they would receive aggregate-level feedback about their unit's test scores for feedback purposes at the conclusion of the study.

While this battalion commander self-selection process to conduct the Hundredth House training made these battalions a convenience sample, we know that each battalion was formed using the same personnel and manning policies as all other Stryker battalions. Therefore, we have no reason to assume that in the aggregate, members of these two battalions are discernibly different than members of other SBCTs, so I believe the findings from the observations of individuals within these battalions was generalizable to other soldiers and leaders within other SBCTs.

Outcome measured – change from pre- to post-treatment

The outcome measured was the change in knowledge by leaders as demonstrated by their scores on a paper and pencil pre- and post-treatment assessment instrument. All subjects completed a pre-treatment test of knowledge regarding what they considered the best reactions during events similar to those encountered during an insurgent ambush. After receiving the training, a post-treatment assessment was administered.⁴⁵

⁴³ The post-deployment reset phase occurs after units return from deployment and during which approximately 60% of the unit transitions out of the unit to: leave the service, attend professional development schools, or move to a different unit.

⁴⁴ The pre-deployment build phase – is characterized by units receiving new soldiers from initial entry training and leaders from professional development schools or other units. This phase is complete when units are fully manned with the teams with which they plan to train and go to war.

⁴⁵ Due to the complexities of the training tool the same set of questions were used in both the pre- and post-treatment test versions.

Manipulation – Hundredth House Leadership Decision-Making Training Tool

This study used an existing SWfF managed training tool called The Hundredth House leadership decision-making training tool to train leaders from two Stryker Battalions. This tool was normally available and directed for use by battalion and company commanders in a pre-packaged format on the Strykernet website for use as a “push” knowledge transfer tool for training individual-level skills of their subordinate leaders. Although the Hundredth House leader decision-making tool is available on the Strykernet website, it would normally not be incorporated into company–level training schedules unless battalion leadership proposed it. For this experiment to test if the tool can achieve increases in individual-level tactical knowledge, the battalion commanders volunteered to use the training tool to conduct leader training for its junior officers, junior NCOs, and junior (entry-level) enlisted soldiers.

The junior leaders undergoing training received approximately two-hours of facilitator-led⁴⁶ training that incorporated the Hundredth House tool. The tool consisted of four separate training stages. Each training stage showed a video reenactment of events leading up to, during, and following an ambush of American forces by insurgents in Iraq.⁴⁷ The reenactment was paused at predetermined stages during which a series of videotaped interviews of leaders involved with the ambush were shown. In these interviews, the leaders described what they knew at each stage of the unfolding ambush, what actions they took, and how they decided on their actions. The facilitator stopped the tool following each stage to promote discussion, provide personal insights, and reinforce key learning points. The value a soldier received from the training came from two sources. The first source of knowledge transfer was the basic information gleaned directly from the tool by a soldier and then converted to knowledge (e.g. all soldiers should be combat lifesaver qualified or the tourniquet should be used in cases where

⁴⁶ The facilitator was determined by the unit. Generally, the seniority of the soldiers being training will also influence the internal selection of the facilitator. In this experiment, the battalion commanders chose to facilitate training for all echelons of subordinates.

⁴⁷ Video reenactments were developed by the battle command training center (BCTC), using videogame software and adding realistic audio. The audio included sound effects and dialog. The BCTC is an organization designed to develop and facilitate training and simulations for soldiers and units at Fort Lewis. The BCTC works closely with the small SWfF organization to provide training tools for inclusion on the SWfF’s Strykernet website.

bleeding cannot be stopped). The second source of knowledge transfer occurred through the interactive discussion between peers involved with the training and the designated facilitator who directs the discussion to achieve desired learning outcomes which is then converted to knowledge by the soldier (e.g. friendly force responses based upon signals received by enemies using machine guns – mission elevated to company or battalion from platoon level, signals/actions that identify whether an ambush is uncoordinated local militia or coordinated movement such as Al Qaeda).⁴⁸

Procedures – tool selection, survey development, and execution

A RAND research team with operational and/or training assessment experience reviewed the Hundredth House tool and conducted an initial brainstorming session. From this session, I developed an evaluation framework that was used for the design of the assessment instrument. The general structure of the evaluation framework consisted of questions designed to address 1) the environment and circumstances the soldiers and unit found themselves in, 2) the enemy, their actions and their signals that should be received, understood, and interpreted, and 3) the friendly elements, their interpretations of enemy signals, responses, and actions and counteractions that were executed. I developed (the research team reviewed and provided comments) a test containing 55 items. The test was intended to take subjects approximately 45 minutes to complete. The test consisted of multiple question formats that were designed to elicit the subject's understanding of the environment, the enemy, and the friendly during an ambush-type event during a protracted contingency deployment. There were ten rank order questions where respondents were asked to rank order items from most likely/important/desired to least likely/important/desired. There were eight questions where respondents were asked to select all the responses that apply. There were thirty six questions where respondents were asked to select the one best answer from among two to six possible responses. Finally, there was one question that asked respondents to select the two best responses from among six possible choices. A copy of the instrument is contained in Appendix A.

⁴⁸ Because this second source of knowledge transfer was free to vary between the two battalions, it is possible that there could be variation in scores due to battalions. This possibility was tested and discussed later in this chapter.

Prior to manipulation, a pilot test of the instrument was conducted using a convenience sample of military officers. This pilot provided feedback on the content and clarity of the tool, variation in responses among experienced and junior military personnel (to ensure sufficient levels of variation among responses for modeling), and the amount of time required to complete the test. Minor revisions based on this pilot were made and the amount of time required to complete the test was within our targeted range of 45–60 minutes.

I and/or SWfF staff provided subjects an informed consent statement followed by detailed test instructions. Subjects then were administered the pre-treatment test.⁴⁹ Subjects' identities were not recorded; however, an identification number that linked the respondent's pre-treatment assessment to their post-treatment assessment was used to facilitate analyses.⁵⁰ The commander or designated facilitator then conducted training using the Hundredth House leader decision-making training tool. I and/or SWfF staff then conducted the post-treatment assessment within 72 hours after completing the training. Completed instruments were sent to RAND.

Assessment methodology

In order to determine a subject's correct answer on an assessment item, we compared the subject's answer to his battalion commander's answer. Battalion commanders established their unit's learning objectives for the training tool. In addition, they were the training facilitators, shaping the discussions and reinforcing their learning objectives during the training. For this reason, and because there are no definitively correct answers to grade responses on this type of situational-based training, we used a battalion commander's stated learning objectives, that is, his responses to the assessment

⁴⁹ Subjects did not immediately complete the training after completion of the pre-treatment instrument. In fact, for one battalion the time between pre-treatment instrument completion and the training manipulation was 96 hours. For the other battalion the training was conducted the same day as the pre-treatment instrument.

⁵⁰ Anonymity was desired to protect the identity of soldiers taking the test. Our study only desired to know changes in knowledge based upon a training tool delivery method. It did not desire to identify soldiers who performed well or poorly. Identification of soldiers may have changed the dynamic of the research effort or may have reduced the number of soldiers willing to participate, thereby biasing the sample. For pragmatic reasons, we also protected the identity of individual soldiers as part of the Human Subjects Protection Committee safeguards that we had established and agreed to abide by.

questions as the test answers.⁵¹ Thus, for scoring purposes the criteria for correct answers was different for each respective battalion.

Data review

I examined all 140 observations in terms of the quality with which respondents completed administrative data as well as pre- and post-test question responses. One subject was immediately identified as suspect, and was dropped from the analyses, because the respondent listed seven years of deployments to OIF and OEF, with overlaps, from 2001-2008. This deployment tempo is not plausible and so the subject's answers were considered to be unreliable. Seven additional respondent assessments⁵² were missing 20 or more posttest scores and were not included in the final dataset. Additionally, two observations were missing 20 or more pretest responses and were therefore not included in the final dataset. I also removed eight questions that had incomplete responses.⁵³ The dataset consisted of 47 questions and 130 pre-post sets of responses.

Scoring rubric for assessment tool

Each of the four types of questions described earlier required the development of a set of rules to determine when a response was correct. While developing these rules, the most-strict interpretation of assessing correct responses was used: one that required an exact match between the respondent's and the commander's response. The author knew that in some question types, e.g. "rank order" and "select all that apply," that this might be too strict to measure learning, however, it was deemed the best starting point to begin the question review process. For a detailed description of how each type of question was reviewed and scored, see Appendix B.

⁵¹ Each battalion commander was told that their answers would be used to determine subjects' correct answers to each item. The commanders completed the assessment with their answers prior to the training event.

⁵² Respondent assessments (observations) 30, 52, 53, 54, 55, 58, 131.

⁵³ The questions removed were 11, 14, 21, 27, 32, 37, 41, and 51. They can be reviewed in Appendix A which lists all 55 original Hundredth House test questions.

Scale construction

I then conducted two procedures to construct the scale. The first was a means response test and the second was a reliability test using Cronbach's alpha.

Response means test

First, a means assessment was conducted. If the proportion of subjects who correctly answered an item on the posttest was very low, less than 10%, we planned to remove the item from the final scale. There were two questions whose pretest correct response rates were less than 10%. However, for these two questions the proportion of respondents having correct post-treatment responses was above 10% (11% and 24%). Because it may be that these were particularly hard items but some subjects were able to master them after training, the items were kept in the final scale.

The complete mean's assessment results can be found Table C.1 in Appendix C. In Table C.1, the mean number of correct responses and a fail code are provided for each question.⁵⁴

Cronbach's alpha scale reliability

The final step in scale construction was to determine the reliability of the scale as a single construct. Scale reliability was computed using Cronbach's alpha. Initial reliability values with 47 items were too low. Determining the appropriate model required an iterative process of deleting items that would provide an increase in the alpha coefficient for the model as a whole upon deletion. Items with negative item to test correlations were deleted during the first two iterations resulting in an alpha of .5321. During the next iteration, 16 items were selected for deletion. This resulted in an alpha of .6759. I deleted one additional item on the final iteration resulting in a final scale with 28 items and alpha equal to .6794. For details of the Cronbach's alpha reliability assessment procedure, see Appendix C, Scale Construction.

Regression modeling

Pretest/posttest design overview

⁵⁴ Question numbers ranged from 1 to 55. The prefix a represents a pretest question and the prefix b represents a posttest question. For example, a29 would be the pretest question 29 and b29 would be the posttest question 29.

Review of the literature on pretest/posttest modeling techniques revealed that there were five primary ones used by researchers. The choice of which technique was appropriate was somewhat dependent upon the circumstances (Sheeber, Sorensen and Howe, 1996), (Bonate, 2000). Bonate (2000) provided a list of these techniques and they are listed in Table 3.1.

Table 3.1
Five techniques of pretest-posttest analysis (from Bonate, 2000)

1. Analysis of variance on final scores alone
2. Analysis of variance on difference scores
3. Analysis of variance on percent change scores
4. Analysis of covariance
5. Blocking by initial scores (stratification)

Techniques one and five were immediately eliminated as techniques for this analysis because of how I designed the model.

The remaining techniques can be lumped into two main categories, ANOVA and analysis of covariance (ANOCOVA) methods. In both cases, the key difference is how the models address differences that exist before treatment. In the repeated measures ANOVA, changes from the pretest score form the basis of analysis. In the ANOCOVA the pretest score is held constant so researchers can analyze what respondents would look like at posttest without the differences in the pretest scores (Sheeber, Sorensen and Howe, 1996). One risk highlighted throughout the literature on ANOVA techniques is a regression toward the means tendency which the ANOCOVA technique takes into account implicitly (Bonate, 2000). Despite discussions of strengths and weaknesses of both techniques, both the Bonate text and the Sheeber article concluded that a good starting point for pretest posttest analysis is the ANOCOVA technique (Bonate, 2000) (Sheeber, Sorensen and Howe, 1996). Therefore, I proceeded with the ANOCOVA technique as my starting point.

Analysis of covariance modeling

The general form of the ANOCOVA model that we used for this analysis is shown below in figure 3.1. A complete variables list including variable codes, variable definitions, and variable range of possible values is located at Appendix D.

Figure 3.1
General Form of ANOCOVA Model

$$y_{psttot} = \beta_0 + \beta_{1-n}x_{1-n} + \beta_{prtot}x_{prtot} + \varepsilon$$

y_{psttot} - Individuals score on the test following training – posttest total score.
 β_0 - Constant.
 β_{1-n} - Regression coefficient associated with each variable.
 x_{1-n} - Variables including unit, session, rank, and deployment experience.
 β_{prtot} - Regression coefficient associated with pretest total score variable.
 x_{prtot} - Pretest total score variable.
 ε - Error term.

Hundredth House model variables

The main effects model variables that we investigated for inclusion in the model are provided in Table 3.2. The table contains the main effects variables, the variable names, and short definitions. As can be seen in the table, the two main variable categories were rank and deployment experience. The next section will provide details about why these variables were included in the model.

Table 3.2
Main Effects Variables Investigated for Model Inclusion

Model Variables	[Variable Name] and Definition
Rank - junior enlisted (JE)	[RankJE] private - corporal
Rank - noncommissioned officers (NCO)	[RankNCO] sergeant - staff sergeant
Rank - Officers (Off)	[RankOFF] second lieutenants - first lieutenants
Deployment experience - Iraq	[Depoif] ever deployed to Iraq
Deployment experience - Afghanistan	[Depoef] ever deployed to Afghanistan
Deployment experience - recent (since 2006)	[Deprec] deployed since 2006 to Iraq or Afghanistan
Deployment experience - old (pre-2006)	[Depold] deployed pre-2006 and none more recent
Deployment experience - never	[Depnever] never deployed to Iraq or Afghanistan
Pretest score	[prtot] score on pretest

Variables investigated⁵⁵

⁵⁵ A complete list of model variables is available at Appendix D.

The first set of variables was subject rank. This set of variables controlled for individual level, that is experience of the subjects, variation. The subjects were divided into three cohorts based upon comparable ranks, junior enlisted [rankje], noncommissioned officer [ranknco], and officer [rankoff].⁵⁶ The second model variable addressed deployment experience. Respondents provided deployment experience to Afghanistan and Iraq in the form of year of arrival to the location. Categorical variables were created to identify soldiers with any deployment experience, recent deployment experience, and experience to each of the Iraq or Afghanistan theaters.⁵⁷ Additionally, interaction variables were introduced to model rank interacting with deployment experience.

STUDY II: UNIT LEVEL PERFORMANCE ASSESSMENT – CONTROL/TREATMENT QUASI-EXPERIMENT

Overview

The second study was broken into two subparts. The first subpart, Ila - Iraq Common Events Handbook Development, consisted of the development of a handbook that was provided to units for their use as they trained and prepared for deployment to COIN or stability operations. The handbook was an adaptive-push approach to training and was used as the treatment effect in this study. The second subpart, Study IIb - Iraq Common Events Handbook Quasi-experiment, used a control/treatment assessment design to assess the effect of the handbook on unit performance.

⁵⁶ The first rank subset consists of entry level soldiers with generally four or fewer years of experience and minimal deployment experience. This subset includes Private (PVT), Private 2 (PV2), and Private First Class (PFC), Specialist (SPC) and Corporal (CPL)]. We aggregated these Soldiers to form a categorical variable we called junior enlisted (rankje). The second subset included in rank includes Sergeants (SGTs) and Staff Sergeants (SSGs), who are mid-level noncommissioned officers [NCOs] with generally 4-10 years of experience including one or more deployment experiences. We have aggregated these NCOs to form a categorical variable called [ranknco]. Closing out the subsets within the rank covariate, we had Second Lieutenants (2LTs) and First Lieutenants (1LTs), who are junior officers with generally 1-4 years of experience and minimal deployment experience. We aggregated these officers to form a categorical variable [rankoff]. The rank covariate controlled for the possibility of differences in performance between ranks.

⁵⁷ A theater is loosely the region of deployment. This study focuses on the Afghanistan theater and the Iraq theater.

STUDY IIA: IRAQ COMMON EVENTS HANDBOOK DEVELOPMENT

Procedures – developing the Iraq Common Events Handbook as a treatment tool

Overview

At the onset of the RAND study, the research team determined that in order to assess the association between SWfF support and unit CTC performance a clearly defined treatment effect was necessary. After early meetings with SWfF such a treatment did not exist. Working with SWfF, RAND developed the concept of using the surveyed feedback from soldiers recently returning from IRAQ to create a systematic feedback system that could be used as a treatment effect in a field experiment. The team believed that two key elements of such a treatment were that a WfF should be able to create similar tools in the future and more importantly that the tool could support SBCTs during their deployment training and preparations, and so we developed a training handbook that was representative of a tool SWfF could replicate. To build the training handbook we: (1) identified 10 common tactical events soldiers faced in Iraq and developed a survey to elicit soldiers responses to these tactical events, (2) developed survey procedures and surveyed over 330 soldiers, (3) developed a codebook and coded the free-response surveys, and (4) used survey responses to develop the Iraq Common Events Approaches Training Handbook. The remainder of this subsection describes these four steps.

Identification of Iraq common events and survey development

Researchers worked with SWfF staff, battalion commanders in I Corps, and other active component Army personnel to develop a preliminary list of the possible tactical events that units recently returning from Iraq would have been exposed to during their deployments. From this initial list, a reduced set of ten common events faced by soldiers in Iraq, as depicted in Table 3.3, was selected. For each of the ten events, RAND developed a brief one paragraph scenario describing the tactical situation (e.g., number of vehicles, activities of friendly and enemy, location of enemy, terrain features).⁵⁸ To assess the content and face validity of the survey, the survey was piloted to a convenience

⁵⁸ See Appendix E for the complete Tactical Vignettes Survey including scenario paragraphs.

sample of active duty military, retired military, and National Guard personnel.⁵⁹ Their feedback was used to refine the questions and response formats.

Table 3.3
Common Event Scenarios Faced by Soldiers in Iraq

1. [IED] Patrol comes upon a PIED (possible/suspected IED).⁶⁰
2. [QRF] Respond as a QRF⁶¹ to a “hot” area.
3. [DP] Dismounted patrol takes small arms fire (SAF).
4. [ROE] ROE⁶² engagement (escalation of force - patrol fires on POVs⁶³ that get too close to convoy).
5. [HD] Conduct hasty/deliberate checkpoint operations.
6. [IF] Indirect fire on FOB/COP/JSS.⁶⁴
7. [CS] Conduct cordon and search.
8. [RD] Conduct raid with Iraqi Security Forces.
9. [MS] Secure a habitual meeting site (District or Neighborhood Advisory Council).
10. [CM] Conduct consequence management operations (immediate response following IED/VBIED⁶⁵ or combat operations damage/injuries in a neighborhood).

Survey procedures and administration to soldiers

The RAND team estimated that the responses to these scenarios could take a significant amount of time to complete (approximately 15 minutes per scenario) and we wanted to keep the survey completion time under one hour, consequently, each respondent was asked to answer four of the ten scenarios. The four scenarios were selected using the following techniques. All subjects received the first two scenarios in Table 3.3, IED and QRF. Of the remaining eight scenarios, four scenarios were

⁵⁹ These were personnel that I personally knew, had significant experience in Iraq, and were immediately available to participate. In total, 7 personnel completed the pilot version of the survey.

⁶⁰ IED – Improvised Explosive Device.

⁶¹ QRF - Quick Reaction Force.

⁶² ROE – Rules of engagement.

⁶³ POV – Privately owned vehicle (non-military personally owned vehicle).

⁶⁴ FOB – Forward Operating Base; COP - Combat Outpost; JSS – Joint Security Station.

⁶⁵ VBIED – Vehicle-borne improvised explosive device.

randomly⁶⁶ selected and presented to respondents. Respondents were asked to select and answer two of these four.⁶⁷ The order of the first two scenarios was randomly assigned so that approximately half of the respondents received the IED scenario first and the other half received the QRF first. The remaining four scenarios available to respondents were randomly ordered similarly. The web survey randomly presented the scenarios in a similar fashion.

The brigade asked each of seven battalions to have at least 30 leaders from their units complete the survey.⁶⁸ The primary means of taking the survey was electronically on a RAND hosted website. One hundred fifty paper copies were provided for those soldiers without access to the internet.

Subjects were asked to provide open-ended responses to the scenarios presented in the survey across five different categories. These five categories are listed in Figure 3.2. Because of survey space limitations, respondents were provided with 10 lines to record their responses for each of the five categories.⁶⁹ We received 340 completed surveys; 239 via web response and 101 via paper. Of these 340 surveys, 330 were usable.⁷⁰

Figure 3.2
Five categories for survey response by respondents

1. **Actions (or key decisions) required:** undertaken (or made) by you or your unit
2. **Coordination, communications, & reports:** within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel
3. **Prior preparations/battle drills/SOPs:** that your unit employed/should employ
4. **Use of provided or developed tools:** (e.g. “stay back 50 meters” signs for vehicles, improved litters for HMMWV mounting)
5. **Other critical items:** other items that you feel were critical to resolving the event but do not “fit” into any of the previous categories

⁶⁶ Researchers developed a spreadsheet using a random number generator and built paper copies of the survey with appropriate scenarios according to the resulting matrix. The web-based surveys also used a random number generator to select the presented scenarios.

⁶⁷ Soldiers completed either a web-based survey or a paper survey depending on their web access availability.

⁶⁸ This was a convenience sample.

⁶⁹ Respondents were directed they could provide more than ten responses as necessary by using the back of the page, but this situation rarely occurred.

⁷⁰ Eight of the web survey responses included no data. Two of the paper responses were copies of the same responses submitted with a different survey number. The data from these two surveys was counted only once.

Codebook development and coding procedures

Codebook development

Categories of soldiers' responses were established prior to the conduct of the survey to provide a framework to guide subjects as they completed the survey. Fifty surveys were reviewed by the RAND team to develop the codebook for evaluating the remaining 280 surveys. For purposes of the survey, a phrase was defined as a complete thought and was coded based upon the content of that thought. For example, a phrase or bullet that was written in the following way, "secure site and report situation to higher" was coded as two complete thoughts 1) "secure site" and 2) "report situation higher" and received two separate codes. Codes were numbered starting with number one. Coded phrases that were used to accomplish the same general task were lumped together into bins and provided a descriptive name. For example, one bin under the actions category was "secure the surrounding area." Coded phrases under this bin included common items such as "set perimeter", "cordon area", and "secure site" among many others. Bins were created as phrases were coded that did not fit⁷¹ into an existing bin. Table 3.4 contains examples of two bins: bin 24 – "secure the surrounding area" and bin 25 – "search the surrounding area for ambush, trigger, other IED weapons, ammo." The shaded row provides a bin title for each bin as well as the category and bin code combination A24 and A25. Phrases with associated codes are listed below each bin. The example previously described can be reviewed in Table 3.4. We continued this process of developing codes for unique phrases, aggregating common phrases within bins under categories for the remaining four categories. Ultimately, our pre-coding resulted in the "actions" category having 35 bins, "coordination" 17 bins, "prior preparations" 10 bins, "use of tools" seven bins, and "other items" six bins.⁷² At the completion of the coding process, we had a codebook consisting of 695 unique codes.

⁷¹ "Fit" in this context means the phrases were not considered common elements of an existing bin. A phrase that did not "fit" therefore warranted creation of a new bin.

⁷² The interested reader can go to Appendix F for the complete codebook including all phrases and their associated codes, bins, and categories.

Table 3.4
Example of Coding Bins in the Actions Category

Bin 24		Bin 25	
Secure the surrounding area	A24	Search area for ambush, trigger, other IED wpns, ammo)	A25
Establish QRF	9	Search for trigger point(s)/houses	201
Block the road/routes	186	Look for [initiation] wire	201
Stop traffic	186	Watch for ambush	202
Block foot & vehicular traffic	186	Expect ambush	202
Set up perimeter	187	Don't commit - probably baited ambush	202
Set perimeter	187	Expect baited ambush	202
Take up positions	187	Check for IEDs	203
Use evhicles to establish perimeter	187	Look for seconday IEDs	203
Isolate with vehicles	187	Scan for secondary munitions	203
Set teams all around	187	Conduct 5/25	204
Cordon area	188	Feet/5/25	204
Cordon off area with wire	188	Do 30/60 meters	204
Cordon with cones & wire	188	Conduct 5 around your victors [vehicles]	204
Check surroundings	189	Search or clear house carefully [for weapons/ammo]	205
Establish/provide 360 security	190	Search houses including informants	205
Keep local populace away	191	Confiscate contraband	206
Alert/clear locals	191	IA will be main effort in joint search/raid	207
Maneuver to secure all routes	192	Use IA to search/clear	208
Secure Mosque	193		
Secure market	193		
Secure/check on school	193		
Establish high ground	194		
Secure site through dominant terrain	194		
Secure site	195		
Secure scene	195		
Secure/clear immediate area	195		
Secure intersections	195		
Secure area	195		
Secure [damaged] vehicle	196		
Provide overwatch with personnel	197		
Weapons (wpns) squad provde overwatch	197		
Collapse cordon	198		
Clear surrounding building	199		
Provide sniper coverage on roof tops	200		

Survey coding procedures

Once the codes and bins were finalized, we hired four coders through a temporary employment agency. None of the coders had previous military experience, but all were Excel trained. Each coder was employed on an hourly basis for the duration of the coding process and released when all surveys were coded.

Coders were briefed on the purpose of the study, provided a digital codebook, directed to code each phrase according to the codebook, and provided a hands-on

demonstration of how to use the codebooks. The digital codebook had two worksheets for each category; one worksheet was sorted alphabetically and one that was sorted by bins to provide coders the flexibility to search and find codes in the way that was most comfortable for them. Additionally, because it was a spreadsheet, the worksheets were searchable by keyword to allow quick review of all possible words in the phrase to allow coders to select the most appropriate response code. Coders used the same procedures and rules for coding phrases as was described in the last section. Coders were instructed to code each complete thought within the subject's responses, providing a code on the designated response sheet. Coders were directed to code subjects' responses within one of the five categories.⁷³ For phrases that were not in the established codebook, they were directed to identify them with a new temporary code. The researchers reviewed responses with temporary or unassigned codes during the coding process and assigned all of these types of responses into current bins and codes or in some cases, established new codes (although no new bins were required during coding). A member of the research team was available to answer coders' questions and provide them guidance at all times. In total, 14,500 subjects' responses were coded in approximately 250 hours.

Inter-coder agreement

We conducted inter-rater agreement analyses of the coders' work by assigning multiple coders a subset of the same subjects' responses. We analyzed these responses by counting the number of phrases for which coders agreed on the coded value and the number for which they disagreed on the coded value. We found that coders assigned the same coded value to responses approximately 75 percent of the time. The agreement percentage was lower than we desired, however, the phrases for which coders were most often in disagreement were the less common (low density) phrases. These phrases were generally well below the 10% cutoff⁷⁴ for inclusion in the handbook and therefore their results were immaterial in creating the handbook.

⁷³ The actions category, because of its size, was apportioned between two coders.

⁷⁴ See footnote 76 for a description of the 10% response cut off rule for inclusion in the handbook.

Iraq Common Events Handbook development

We collapsed the five categories in Figure 3.4 into three categories because the responses within the “actions” and “preparations” categories overlapped in many cases and items within the “other” category were more useful when rolled into appropriate categories. The new categories were 1) common actions/reminders, 2) equipment/kits/tools to support operations, and 3) event execution checklists. We conducted a separate frequency analysis of codes for each of the ten common events from Figure 3.4.⁷⁵ For each event we determined how many responses were received for each code across the three categories of actions, equipment, and reports.⁷⁶ A coded item was selected for inclusion in the handbook if it occurred 10% or more of the time within one of the three categories.⁷⁷ The phrase associated with this coded item then became the item’s name in the handbook. Some additional items were also included in the lists either because they were near the cutoff score or were added for completeness because doctrine or TTPs would suggest they would be linked with items that made the 10% cutoff. These frequency lists within categories were then used to construct the Iraq Common Event Approaches Handbooks that we provided leaders as a treatment tool.

Iraq Common Events Handbook treatment tool

Once the pool of items was selected based on the procedures above, the items were organized by event and category into a fourteen page booklet. This booklet, the Iraq Common Event Approaches Handbook, was a pocket sized, 5”x 8” spiral-bound handbook,⁷⁸ similar in design to unit SOPs. Each event was on a single double-sided page consisting of three sections: (1) common actions/reminders, and (2)

⁷⁵ Table G.1 in Appendix G provides a summary of the number of usable coded responses we received for each of the 10 scenarios. The IED scenario had over 3800 usable responses and the QRF scenario had over 4100 responses.

⁷⁶ Tables G.2 through G.11 in Appendix G provide the list of items and their frequencies for each of the 10 scenarios. These tables were used to form the handbook.

⁷⁷ Ten percent was selected after reviewing the number of responses that fell above and below this cutoff. The desire was to develop a handbook that could capture the combat returnees’ learning in a concise one page format for each scenario. The author felt the ten percent cutoff afforded the right balance between capturing the essence of the combat returnees’ knowledge while guarding against inclusion of every unique idea that was employed in theater which would turn the document into a collection of data rather than a synthesis of information.

⁷⁸ See Appendix H for the entire Iraq Common Events Approaches Handbook.

equipment/kits/tools to support operations on the front side, and (3) an event execution checklist. At the end of the handbook we included a final double-sided page with a consolidated list of all common actions/reminders and equipment/kits/tools items that were mentioned in the handbook (to facilitate use as a pre-combat checks checklist). The remaining pages included an index, a description of where the data were derived from, and a blank page for note recording.

STUDY IIB: CONTRASTING DIFFERENCES IN COLLECTIVE-LEVEL PERFORMANCE AMONG UNITS THAT DID AND DID NOT RECEIVE THE IRAQ COMMON EVENTS APPROACHES HANDBOOK

Participants – size, selection, and composition

The populations of interest for this research were leaders and their squads and teams within platoons.⁷⁹ The research team developed the sample size by including all SBCTs (there were four of these) that were scheduled to conduct a CTC rotation within the 12 month period of data collection and two additional “heavy” BCTs. There were two sampling frames. The first was comprised of all brigades attending the NTC during the twelve month period of the study. Of these ten brigades, all three Stryker brigades and two additional “heavy” brigades were selected. Of the three SBCTs, one conducted its CTC rotation before the training handbook was completed and two were scheduled to train after completion. We used the early SBCT as the control group and both of the later SBCTs as treatment groups. Because the treatment brigades conducted training and departed for Iraq shortly thereafter, there were no concerns about contamination or spillover of knowledge through early vs. late training cycles. The two heavy brigades selected were attending a rotation immediately preceding or following an SBCT rotation to control for observer differences in assessments. The second sampling frame was comprised of one SBCT attending training at JRTC. This National Guard SBCT was not originally scheduled to be included in the study. As such, we were only able to request support from the JRTC to collect this one brigade’s worth of data. Because there was

⁷⁹ The squad leader is responsible for a 9-10 man squad. There are two teams (and associated team leaders) within each squad. Enough handbooks were provided so that all team leaders and above in rank could receive one. This reference addresses the expectation that a team leader may have shared the handbook content with the team through training, and he may not have required the subordinates to study the handbook itself.

only one National Guard SBCT, we selected one of the subordinate battalions to serve as the treatment battalion, and the other three battalions provided control data. The National Guard SBCT included three infantry battalions and one cavalry squadron.⁸⁰ We selected an infantry battalion as the treatment condition so that the control and treatment groups were similar in composition except for receiving the handbook.⁸¹ The risks and ramifications of contamination⁸² were discussed with the brigade commander and the battalion commander of the treatment group who acknowledged the need and pledged to do their best to maintain the integrity of the quasi-experiment. To measure if such contamination took place, a manipulation check survey was administered.⁸³ The results from this survey found that less than 4% of control units saw the handbook indicating that the control groups were not contaminated. The results also indicated that 23% of treatment groups saw the handbook. Although this number was lower than desired, the fact that meaningful and statistically significant results were obtained with this level of treatment incorporation indicated that results could have been even greater with a higher incorporation rate. From these sampling frames, the treatment groups were identified by those units who received the training handbook prior to their deployment to JRTC or NTC and the control groups were identified by those units who did not receive a training handbook prior to their CTC rotation.

The unit of analysis was the maneuver⁸⁴ platoon. We expected to receive about 200 platoon observations from observers across the 10 events for each brigade at a CTC. Overall, we received 1084 platoon observations of 202 platoons including 422 treatment and 666 control. By CTC location, we received 934 observations from NTC (382 treatment, 552 control) and 150 from JRTC (40 treatment, 110 control).

⁸⁰ The infantry battalions are identical in composition with three line companies of three platoons each. The cavalry squadron consists of four line companies composed of equal numbers of reconnaissance and surveillance companies.

⁸¹ At the time the handbook was finalized, two of the three infantry battalions had already begun or completed their two weeks of individual skills-focused annual training. The remaining battalion was selected as the treatment group and handbooks were provided for their use.

⁸² Contamination would consist of designated control groups (any battalions or squadrons in the BCT other than the designated treatment group) gaining access to and incorporating the contents of handbooks into training.

⁸³ See Table 3.7 for the manipulation check survey.

Controlling for potentially confounding effects

We identified the potential issue that teams may not start the study with identical levels of knowledge and experience. We believe these concerns are mitigated by a number of factors including Army personnel assignment policies, sample size, downward pressure of uneven implementation, and the use of repeated measures regression techniques while conducting data analysis. First, random selection of individuals into each platoon was not possible, but we know that each platoon was formed using the same general personnel and manning policies as all other platoons – so in the aggregate similar cohorts across brigades should have similar characteristics.⁸⁵ Second, the sample size is robust; there are 1084 observations of 202 platoons. Based upon the manning policies and the large sample sizes, these data should approximate the normal distribution and the results should be generalizable to other platoons within other SBCTs. Third, I used repeated measures regression clustering techniques to account for the lack of independence of each observation of this analysis (each platoon can be observed up to 10 times if they complete each of the 10 events). The repeated measures data analysis techniques are described in detail in Chapter 4.

Outcome measured – difference between treatment and control

The outcome measured was the difference in performance between treatment and control units as demonstrated by their scores on a CTC assessment on common events faced by soldiers in Iraq.

Variables and measures – dependent, independent, and controls

The dependent variable in this research study was a unit's score on an assessment conducted at a CTC on one of 10 common events faced by soldiers in Iraq. The

⁸⁴ Maneuver company refers generally to Infantry and Armor companies (or any others designated by a commander) that routinely conduct offensive, defensive, or stability operations.

⁸⁵ Entry-level soldiers are assigned to units based on military occupational specialties without regard for prior knowledge. For assigning mid-level and senior noncommissioned officers and officers there exists a strong incentive for unit leaders at company and battalion level (above platoon level) to assign and move personnel within platoons and companies as necessary to balance the levels of experience and capabilities to increase the likelihood that they could all perform at or above minimum standards in training and that they have the best chance of completing missions while minimizing casualties while in combat.

independent variable was whether or not a platoon received the Iraq Common Event Approaches training handbook. To measure units' gains in training proficiency, we used observer controller (OC) and trainer mentor (TM)⁸⁶ assessment cards that are completed during normal deployment training exercises. The assessment cards feature an eight-option response⁸⁷ by observers for each observed skill/attribute.

Dependent variable assessment cards (questionnaires)

The research team developed the questionnaires by preparing a data collection card using the information contained in the training handbook. Each of the assessment items scored by observers was paralleled on the handbook. That is, these questionnaires specifically assessed each item from the ICEA handbook. The questionnaire consisted of the same three categories contained in the training handbook: common actions/reminders, equipment/kits/tools to support operations, and an event execution checklist. Two of the three categories, common actions/reminders and the event execution checklist contain an evaluation scale that included eight possible responses. The response options included, numeric responses 0-5; with zero equating to not done and five equating to superior performance. Response options also included not applicable (NA) which meant the item should not have been executed, and unobserved (UO) which meant the external evaluator did not observe item execution. Table 3.5 provides an example of a questionnaire that shows the administrative data collection questions along the top, followed by the observer response option summary just below the administrative data, followed by the actual response options aligned with item questions filling the remainder of the questionnaire.

⁸⁶ Hereafter, OCs and TMs will be referred to as observers.

⁸⁷ A complete explanation of the assessment cards will be provided in the next section titled "Dependent variable assessment cards."

Table 3.5
Iraq Common Event Approaches Handbook: Observer Questionnaire Response Options (Front Side)



ARROYO CENTER

Iraq Common Event Approaches – Possible IED (PIED) Identified by Patrol Questionnaire

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T	S U F F I C I E N T	S O M E W H A T L Y	M O D E R A T E L Y	C O M P L E T E	S U P E R I O R	N A P P L I C A B L E	U N O B S E R V E D
Common actions/reminders								
2. During preparation for execution and reporting, how well did the unit ...								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
2) 9-line IED?	0	1	2	3	4	5	NA	UO
3) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO
b. Track frequencies and call signs for enabling units (e.g., EOD)?	0	1	2	3	4	5	NA	UO
c. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO
d. Conduct rock drills (internally & with Iraqi forces)?	0	1	2	3	4	5	NA	UO
e. Conduct movement/convoy withdrawal brief?	0	1	2	3	4	5	NA	UO
f. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO
g. Disseminate photos/description of BOLO* /high value targets?	0	1	2	3	4	5	NA	UO
h. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA	UO
i. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO
j. Update/mark friendly/enemy and incident locations on FBCB2?	0	1	2	3	4	5	NA	UO
k. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Stop/pull off route/MSR?	0	1	2	3	4	5	NA	UO
b. Create standoff (from suspected IED)?	0	1	2	3	4	5	NA	UO
c. Conduct IED drills?	0	1	2	3	4	5	NA	UO
d. Secure area?	0	1	2	3	4	5	NA	UO
e. Cordon area?	0	1	2	3	4	5	NA	UO
f. Alert/clear locals?	0	1	2	3	4	5	NA	UO
g. Put vehicles in overwatch and roadblock (foot and vehicular traffic)?	0	1	2	3	4	5	NA	UO
h. Use Binocs, RWS, vehicle optics to identify IED?	0	1	2	3	4	5	NA	UO
i. Mark IED or cordon as soon as possible?	0	1	2	3	4	5	NA	UO
j. Update higher by sending full IED/UXO report?	0	1	2	3	4	5	NA	UO
k. Mark on FBCB2?	0	1	2	3	4	5	NA	UO
l. Call/coordinate with explosive ordnance disposal (EOD)?	0	1	2	3	4	5	NA	UO
m. Call/coordinate UAV support?	0	1	2	3	4	5	NA	UO
n. Engage locals for intelligence about IED?	0	1	2	3	4	5	NA	UO
o. Check surroundings/look for initiation wires and other IEDs?	0	1	2	3	4	5	NA	UO
p. Await further orders (await EOD or mark/bypass)?	0	1	2	3	4	5	NA	UO
q. Lead EOD to IED (secure and protect EOD)?	0	1	2	3	4	5	NA	UO
r. Execute contingency plan/unit battle drill for IED disposal if EOD was unavailable?	0	1	2	3	4	5	NA	UO
s. Use EOD to reduce the IED?	0	1	2	3	4	5	NA	UO
t. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA	UO
u. Continue mission?	0	1	2	3	4	5	NA	UO
v. Provide detailed/complete IED/event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
w. Execute information operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

The equipment/kits/tools to support operations category of the questionnaire consisted of a yes or no check by the evaluator on whether the unit (1) had an SOP⁸⁸ listing the items, (2) had the items available for use, (3) should have used the items, (4) did use the items, and the final question again used the 0-5, NA, UO scale to address to what degree the tactical situation was influenced by the use of the item. Table 3.6 provides an example of a questionnaire that shows the name of the piece of equipment in the first column, and then shows the remaining SOP components as listed previously.

⁸⁸ Standing Operating Procedure – identifies lists, techniques, or procedures developed and commonly used by units.

Table 3.6
Iraq Common Event Approaches Handbook: Observer Questionnaire Response Options (Back Side)

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used, (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item <u>was</u> used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?								
					0	1	2	3	4	5	NA	UO	
Signs – deadly force, warning, EOF (for vehicles & cordon)					0	1	2	3	4	5	NA	UO	
Bullhorns					0	1	2	3	4	5	NA	UO	
Blinking lights					0	1	2	3	4	5	NA	UO	
Chem lights					0	1	2	3	4	5	NA	UO	
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO	
Cones					0	1	2	3	4	5	NA	UO	
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO	
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO	
Litter/skidcos					0	1	2	3	4	5	NA	UO	
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO	
Detainee kits*					0	1	2	3	4	5	NA	UO	
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO	
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO	
Interpreter					0	1	2	3	4	5	NA	UO	

* AWT – Air Weapons Team

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xsray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Independent Variable - dissemination and incorporation of training handbook (treatment)

Commanders from both the Active duty and National Guard were briefed by RAND that all soldiers, team leader and above, should receive the handbook. Commanders were also briefed that the purpose of the handbook was to test a knowledge transfer delivery method and that commanders should incorporate the handbook into their training plans as they saw fit. RAND provided the commanders some examples of how the handbook could be incorporated including (1) leaders reading/reviewing, (2) modifying drills/SOPs, and (3) using as a pre-execution checklist.

Because of time constraints, handbook dissemination for the National Guard and Active duty SBCTs was slightly different, although I believe with the same end result; leaders within both organizations received the handbook and the commanders' guidance for implementing it into unit training.

For the National Guard units in the study, the training handbooks were delivered to the commander of the infantry battalion that served as the treatment group in time to be disseminated prior to the unit conducting their individual-level focused two weeks of annual training. The unit received 200 handbooks; enough to provide a copy to every leader in the battalion, from team leader to battalion commander.

For the active duty units in the study, the handbooks were distributed at the time of the briefing by RAND. One thousand copies per brigade were provided to the unit's leadership to disseminate and incorporate prior to initiating individual and collective training. All commanders from the treatment brigades agreed to incorporate the handbook into their unit training plans.

Manipulation check - unit training handbook usage surveys

As a manipulation check on the incorporation of the training handbook, all soldiers within units involved as either treatment or control groups were surveyed about their knowledge of the manipulation.⁸⁹ The items on the survey are contained in Table

⁸⁹ This survey was done in paper-and-pencil format as well as by web link.

3.7. This manipulation check confirmed both if units designated as treatment received and used the handbook and if soldiers in the control group did not.⁹⁰

Table 3.7
Iraq Common Event Approaches Handbook – Manipulation Check

<p>This survey is part of a study conducted by the Arroyo Center of the RAND Corporation, a non-profit research institute, in Santa Monica, California. The study is sponsored by I Corps, Fort Lewis, Washington. The goal of the study is to assist the Army to better understand how the Stryker Warfighters' Forum (SWfF) is helping to sustain and improve Stryker Soldier and leader skills capabilities and combat readiness. You have been asked to complete this survey because you are preparing for deployment with a Stryker unit. Your participation is voluntary. The estimated time to complete the survey is about 3 minutes.</p> <p>Your answers on this survey will go to the research team at the RAND Corporation. Data will contain an individual's platoon, company, battalion, and brigade; however, RAND will NOT have or obtain any information linking the unit position to the name of a unit member. RAND will not provide information to the U.S. Army about who participated in the survey, but may inform it of what percent of individuals responded from different units. In reporting results of the survey, RAND will only provide summary data to the U.S. Army or data in a format that would ensure the U.S. Army could NOT link data to an individual or a specific platoon-level unit. RAND will protect all data collected and will keep them only as long as is necessary to complete the study and any related follow-on studies.</p> <p>We urge you to complete this survey. Your participation is very important to the study team's efforts to get as complete a picture as possible of the SWfF's contribution to skills capabilities and combat readiness.</p> <p>If you have any questions about your participation in the study, you may contact Jamie Gayton from RAND at 310.393.0411 X7636 jgayton@rand.org</p> <p>If you have any questions about your rights as a research participant, you may contact: Jim Tebow, Co-Administrator RAND Human Subjects Protection Committee 1776 Main Street M3W Santa Monica, CA 90407-2138 (310) 393-0411 x7173 James_Tebow@rand.org</p>		
1. Strykernet Website		
a. Have you ever <u>visited</u> the Strykernet website?	Yes	No
b. Have you ever <u>USED</u> the Strykernet website for training or individual development?	Yes	No
2. Strykernet Symposium		
a. Have you participated in a Strykernet Symposium either in person or remotely?	Yes	No
3. Stryker Warfighting Forum Staff		
a. Have you ever received support from the SWfF staff either by email, phone, or face to face for any Stryker support?	Yes	No
4. Iraq “Common Event Approaches” handbook		
a. Have you seen or heard of the RAND/SWfF “Iraq Common Events Approaches” handbook?	Yes	No
b. Have you used/incorporated the “Iraq Common Events Approaches” handbook into your unit’s training?	Yes	No

⁹⁰ However, the research team did not attempt to determine the degree of incorporation into training (duration of time used), the method of incorporation (e.g. classroom review, standing operating procedure incorporation, pre-mission checklist), or the soldier’s understanding of the material. Collecting and analyzing this data could further understanding of the learning process associated with how the handbook affected performance, but the focus here was a first step “would it affect performance.”

Procedures - data collection methodology using assessment tool

The research team used external evaluators to complete assessment cards on treatment and control units. Observer Controllers (OCs) at the National Training Center (NTC) and Trainer Mentors (TMs) at the Joint Readiness Training Center who routinely assess performance and provide feedback through an after action review (AAR) process to leaders and units completed the assessment cards. Members of the research team provided instructions to representative members of these observer groups on the proper completion of assessment cards. These representatives confirmed that these instructions were provided to all observers involved with this study. Additionally, an instruction sheet was included each time the questionnaires were distributed (A copy of this instruction sheet is in Appendix I). Observers were instructed to collect data on the first instance that the unit completed the desired training event during their CTC rotation (for example, they were asked to complete the IED card the first time the training event included an IED situation). Most questionnaires were completed during a semi-controlled, initial stage of training when units were assessed on specific events during situational training exercises (STXs).⁹¹ Finally, observers were asked to complete each card immediately following the execution of each event. In order to statistically control for observer experience, the research team also collected data on the level of experience.⁹² This data collection did not require any modifications to existing unit training or evaluation plans at the CTCs. All data collection was completed while units were conducting regularly planned training using observers that are already in place to assess training.

Procedures - data collection quality control

⁹¹ The STXs allow OCs to assess and coach units on specific events in isolation prior to the unit being required to handle many events simultaneously during a later stage of training called full spectrum operations (FSO). The Observers were instructed that data could be collected during the situational training exercise phase or during the full spectrum operations and force-on-force phases – again with the emphasis that we desired them to capture the assessment on the first iteration of each event to capture the change in performance associated with the handbook and not the repeated training at the CTC.

⁹² Researchers assessed the level of experience by collecting data on the number of rotations an OC or TM had completed. Those with four or more rotations complete were considered to be experienced and those with fewer than 4 rotations inexperienced.

RAND researchers conducted several visits to the training centers to meet with the coordinating staffs, primary representatives and observers to validate that the data collection process was completed. These visits involved being escorted by a senior observer so that RAND personnel could discuss data collection processes with observers, and verify questionnaire completion.

Data receipt, consolidation, and review

Observers returned completed assessment cards to CTC assessment team representatives at the completion of each rotation. The groups' representatives reviewed the questionnaires for completeness of administrative data per guidelines from RAND researchers.⁹³ RAND researchers either collected assessment cards at the CTC or received assessment cards through parcel delivery. Once again, data cards were carefully reviewed for completeness of administrative data to ensure collected data would be usable for the purposes intended.

Regression modeling

Repeated measures design overview

The CTC questionnaire data for this study were repeated in nature. That is, the same platoon provided multiple questionnaires, or data points. Generally two analytic procedures are used to analyze repeated measures data: repeated measures analysis of variance (RMAOV) and generalized linear model (GLM) regression using a clustering technique. I wanted to use a procedure that provided (1) an opportunity to use all or most of the available data (to enable the most broad/generalizable statements about the results), and (2) easily interpreted results to policymakers and leaders. A review of RMAOV methods including practical applications and examples (Higbee, 2000 and Omar et al., 1999) revealed that data-shaping (use of a subset of the data) would be necessary to develop a dependent variable that included sufficient repeated measures to conduct the analysis. Using only a subset of the data could limit the generalizability of the results. Also, the interpretation of the RMAOV results required a moderate level of

⁹³ Representatives were asked to confirm that all questionnaires had completed call sign data to identify the OC/TM that completed the card and completed unit identifications to include platoon/company/battalion/brigade.

statistical understanding or a detailed explanation to facilitate understanding. On the other hand, GLM with clustering allowed for the use of all data, and provided simple regression coefficient results that were easily interpreted and understandable by individuals. Consequently, I chose to use GLM with clustering.

Generalized Linear Model with clustering

The general form of the GLM used for this analysis is shown in figure 3.3. As can be seen in Figure 3.3 the dependent variable was the average score for a platoon on a single questionnaire.⁹⁴

A complete variables list including variable codes, variable definitions, and variable range of possible values is located at Appendix K.

Figure 3.3
General form of GLM regression model

$$y_{avgtotscr} = \beta_0 + \beta_{1-n}x_{1-n} + \beta_{treatment}x_{treatment} + \varepsilon$$

$y_{avgtotscr}$ - Platoon average total score on the CTC assessment.

β_0 - Constant.

β_{1-n} - Regression coefficient associated with each covariate.

x_{1-n} - Covariates including site, training day, observer experience, and unit.

$\beta_{treatment}$ - Regression coefficient associated with receiving the Iraq Common Events Approaches Handbook (treatment).

$x_{treatment}$ - Treatment categorical variable.

ε - Error term

⁹⁴ The average score was determined by summing the numerical score for each question for which a response was received on the questionnaire and dividing by the total number of questions for which a response was received. We used the average total score for this analyses so it included questions from all three categories (reports, tools, and events).

Model covariates⁹⁵

Several covariates were estimated. The combat training center where the questionnaire was completed was included in the estimated models in order to control for any differences between the observers' scoring at the two combat training centers. The questionnaire form type was included in the model⁹⁶ to measure and control if outcome effects were limited to a subset of events rather than the handbook (treatment) as a whole. The third model covariate controlled for if the data were collected during a STX,⁹⁷ or during force-on-force operations.⁹⁸ Observer experience (the number of rotations as an observer⁹⁹) - was also estimated.¹⁰⁰ CTC training was intended to improve unit performance; consequently, we assumed that units' performance could have increased as a function of the number of CTC training days completed at the time of measurement. Training day (what point in the fifteen day¹⁰¹ training cycle the unit received its assessment for the particular event) was estimated in the model as well.¹⁰² The specific unit that was being assessed for each event was also estimated. Because we are including assessments of units across a possible ten events, our observations are not wholly independent. To address this lack of independence, we included an estimate of unit to cluster observations and mitigate the negative effects of the lack of independence.

⁹⁵ A complete list of model variables is available at Appendix J.

⁹⁶ See Figure 3.4 for a complete list of Iraq Common Events Approaches scenarios that were used to create the 10 questionnaire types and Appendix J for each questionnaire used in this study.

⁹⁷ STX stands for situational training exercise – an exercise limited in scope and designed to train and allow assessment of a specific event without the stressors of additional stimuli that were not intended.

⁹⁸ Force-on-force training events are unique from STX in that they included a free play of multiple stimuli and events occurring simultaneously.

⁹⁹ A rotation is an approximately month-long training event conducted at a combat training center where an observer would usually conduct between 10 and 20 performance assessments of a unit. Each rotation provides multiple opportunities to assess performance and therefore to gain experience.

¹⁰⁰ Instead of using a continuous measure of experience, we instead developed a categorical variable that identified when an observer had completed four or more rotations assessing performance to control for the effect of experience on average total score received.

¹⁰¹ CTC training cycles are generally 14 days long. One of the units involved in this research had an extended rotation.

¹⁰² We did request that observers record their observation of units during the units first iteration of an Iraq common event executed during the rotation. However, because there are some common items across events, we also needed to account for this repeated measure between observations.

4. ANALYSIS AND RESULTS

OVERALL FINDINGS AND RESULTS

This dissertation explored whether two specific KT methods, push and adaptive-push, would yield positive outcomes that WfFs and other Army organizations could (and should consider to) use more extensively. In the first study, I tested if use of a current SWfF individual-level training tool, the Hundredth House, would lead to significant improvements in junior leader tactical knowledge. The answer was yes it did, but it was better for some types of leaders than others. In the second study, I tested if units that received a handbook that was developed based on recently deployed soldiers' experiences would have better CTC performance than units that never received the handbook. Again, the answer was yes. Interestingly, the handbook may have not only directly affected unit training, but it may have been associated with units' increased use of other SWfF training resources. The remainder of this chapter documents the results of both these studies.

STUDY I: INDIVIDUAL-LEVEL LEARNING ASSOCIATED WITH “PUSH” KNOWLEDGE DELIVERY TOOL

“Push” knowledge delivery hypothesized to improve individual-level knowledge gain

The relationship between “push” knowledge delivery and increased knowledge gain by individuals was hypothesized to be positive. Because these soldiers were all preparing for deployment, we hypothesized that they were all motivated sufficiently to learn procedures and techniques that would help them perform in Iraq. Hence soldiers had internal incentives in place to satisfy the need/pull component of knowledge transfer highlighted in the literature (Alavi and Leidner, 1999), (Manville and Foote, 1996). The expectation was that internally motivated soldiers who received the “push” training associated with the Hundredth House leader decision-making training tool would show increased performance as measured by improved scores on a post-training assessment.

Hundredth House summary statistics

Summary statistics for the Hundredth House are provided in Table 4.1. Table 4.1 contains the pretest and posttest average scores, standard deviations, and number of valid cases observed for three rank groups and two deployment characteristics within the study. As can be seen in the table, officers had relatively high pretest and posttest average scores, while soldiers with deployment experience to Afghanistan had relatively low posttest scores. The following section provides the full regression results with all available variables and selected interaction terms modeled.

Table 4.1
Hundredth House Summary Statistics – Average Scores, Standard Deviations, and Counts by Variables

Variables	Pretest Average Score	SD	Posttest Average Score	SD	n
Junior enlisted (PVT-CPL)	7.81	4.12	11.12	4.37	47
Noncommissioned officers (SGT-SSG)	7.64	3.40	10.03	3.47	64
Officers (2LT-1LT)	11.47	3.44	16.26	2.90	19
Deployed to Iraq	7.69	3.86	10.71	3.94	96
Deployed to Afghanistan	7.73	3.44	9.77	4.27	30

Variable construction and selection for modeling

Of primary interest in this study was whether the hundredth house training led to improvements between the pre- and post-training scores. However, I was also interested in two other main effects: the effect of rank and the effect of deployment history on posttest scores. It is possible that the value of the treatment could vary based on the amount of experience a soldier had acquired. For example, this type of training could benefit those who had never deployed more than those that had previously deployed because those that had never deployed may have less knowledge prior to the training.

I aggregated respondent ranks consistent with traditional Army rank structure. For instance, I collapsed the rank data into three major cohorts: junior enlisted [rankje], noncommissioned officer [ranknc], and officer [rankoff], since these cohorts provided natural break points within the ranks for commanders to facilitate recommendations for

future training models.¹⁰³ For deployments, I aggregated the data by location (Iraq or Afghanistan) [depoif and depoef] and by period in which they occurred (pre-2006 or since 2006) (dep_rec, dep_old, dep_never). These aggregations allowed me flexibility to model variables with natural break points so that actionable training recommendations were possible.

Deployment data was modeled using several different constructed variables¹⁰⁴ to increase the likelihood that if deployment experience did have an affect on posttest scores that it would be captured in the final model. The deployment interactions I developed and modeled included:

- Deployment to both Iraq and Afghanistan [depboth]
- Rank NCO and deployment to OIF [inter2]
- Rank NCO and deployment to OEF [inter3]
- Rank NCO and 2006 or later deployment to Iraq [interrec]
- Rank NCO and deployment ever Afghanistan and pre-2006 Iraq [depoldev]

Exploratory regression analysis using rank and deployment history

I included nine main effect variables and five interaction variables in the initial model. I used Stata statistical software to perform regression analyses to test the hypothesis while statistically accounting for other variables that could influence the relationship between the post- and pre-treatment assessments (Intercooled Stata 9).

As discussed in Chapter 3, such variables could have been related to the outcome of interest (change in measured knowledge after treatment). I tested the model with all nine available variables and five interaction terms. The results of this test are provided in Table 4.2. The table shows the variables and their coefficients, t-statistics, statistical significance, and, whether the variable was retained in the final model. In addition, the final row in Table 4.2 contains a model fit statistic, Adjusted R² for the model.

¹⁰³ Other rank groupings were considered and estimated, but overall these groupings provided the best estimates and most parsimonious explanation of the effect of rank on the post-training measure. Only these ranks groupings are reported for the remainder of this document.

¹⁰⁴ Deployment variables were also modeled in such a way that the breakpoints had meaning and results could easily translate into actionable training for categories of soldiers with specific deployment experience.

Table 4.2
Hundredth House Initial Regression Results with Nine Variables and Five Interaction Terms

Initial Regression Model				
Variable [variable name]	Coefficient	t-stat	Sig	Retained
Rank - Noncommissioned officer [ranknco]	0.70	0.2	no	yes
Rank - Officer [rankoff]	3.49	1.22	no	yes
Deployment - Iraq (OIF) [depoif]	4.63	0.86	no	
Deployment - Afghanistan (OEF) [depoef]	-1.54	-0.45	no	
Deployment - recent (since 2006) [dep_rec]	1.23	0.42	no	
Deployment - old (pre-2006) [dep_old]	-7.14	-1.39	no	
Deployment - OIF since 2006 [deprecir]	-6.01	-1.11	no	
Deployment - both OIF and OEF [depboth]	2.32	0.64	no	
Deployment - ever to OEF or pre-2006 to OIF [depoldev]	1.31	0.38	no	yes
Rank*Deployment - NCO * depoldev [inter]	-3.24	-0.95	no	yes
Rank*Deployment - NCO * deprecir [interrec]	-0.65	-0.15	no	
Rank*Deployment - NCO * OIF [inter2]	0.26	0.06	no	
Rank*Deployment - NCO * OEF [inter3]	-1.50	-0.36	no	
pretest score [prtot]	0.46	5.45	yes	yes
Adj R ² = 0.38				

After reviewing this full-model regression estimate, I began the variable review and selection process. I dropped all interaction terms except [inter] since it had the highest t-stat value of all interaction terms. Dropping these variables resulted in the [inter] variable becoming statistically significant ($p < .05$). I then dropped the variables [depoif], [depoef], and [depboth] since these also had low t-stats (less than 1.0). The resulting model had [rankoff] significant ($p < .001$) and [inter] nearly significant at ($p < .06$). I then dropped [deprecir] since it had a t-stat of 0.71 and was the only remaining variable that was not either statistically significant or a component of a statistically significant interaction term.

The best fit model consisted of four variables and one interaction term. The best series of variables that predicted post-training score (psttot)¹⁰⁵ was (1) being a noncommissioned officer [ranknco], (2) being a commissioned officer [rankoff], (3) having deployment experience to Afghanistan or pre-2006 Iraq [depoldev], (4) interaction between NCOs [ranknco] and deployment to Afghanistan or pre-2006 Iraq [depoldev], and (5) the pretest score [prtot] as variables. A short description of the variables follows. The [ranknco] variable name indicated the subject was a noncommissioned officer. The

¹⁰⁵ See Appendix D Hundredth House Variables list for complete list of variables and definitions.

[rankoff] variable name indicated the subject was an officer. The [depoldev] variable name indicated if the subject had deployed to Afghanistan or had participated in a pre-2006 deployment to Iraq. The interaction term [inter] indicated that the subject was a noncommissioned officer and had deployed to Afghanistan or had deployed to Iraq pre-2006. The [prtot] estimates the relationship between the post-training score and the score the subject attained on the pretest. This model is in Figure 4.1.

Figure 4.1
Hundredth House Estimate of Regression Model Parameters

$$Y_{psttot} = \beta_0 + \beta_{ranknco}x_{ranknco} + \beta_{rankoff}x_{rankoff} + \beta_{depoldev}x_{depoldev} + \beta_{inter}x_{inter} + \beta_{prtot}x_{prtot} + \varepsilon$$

y_{psttot} - Subject score on the test following training.

β_0 - Constant (junior enlisted with no deployment experience).

$\beta_{ranknco}$ - Regression coefficient associated with indicator variable ranknco.

$x_{ranknco}$ - Indicator variable for soldier with rank of Sergeant or Staff Sergeant.

$\beta_{rankoff}$ - Regression coefficient associated with indicator variable rankoff.

$x_{rankoff}$ - Indicator variable for soldier with rank of Second or First Lieutenant.

$\beta_{depoldev}$ - Regression coefficient associated with indicator variable depoldev.

$x_{depoldev}$ - Indicator variable for soldier ever deployed to Afghanistan or deployed to Iraq pre-2006.

β_{inter} - Regression coefficient associated with interaction term inter.

X_{inter} - Interaction term for ranknco and depoldev.

β_{prtot} - Regression coefficient associated with pretest total score covariate.

X_{prtot} - Pretest total score covariate.

ε - Error term

The final regression model results are depicted in Table 4.3. The table displays the model estimates, the statistical t-test values for each estimate, and the last column indicates if the estimate was statistically significant for each variable that remained in the

final model. The pretest score coefficient is 0.45 and was statistically significant at the 99% level as shown in Table 4.3. The interaction between [ranknco] and [depoldev] in the regression model resulted in a large and negative regression coefficient -3.15 that is statistically significant at the 95% level. This estimate suggested that NCOs with prior OEF or pre-2006 OIF experience did not benefit as much from the treatment as others. The rankoff variable had a moderately large (3.58) coefficient that was statistically significant at greater than the 99% level. This effect suggested that officers were likely to have a higher assessment score after treatment than junior enlisted soldiers with no previous deployment.¹⁰⁶ The ranknco variable, as an individual variable, had a regression coefficient that was small and slightly positive; however, it was not statistically significant. The same holds true for the depoldev variable. It was also small and slightly positive; however, it was not statistically significant. These two variables, ranknco and depoldev, were kept in the model because they were the underlying variables that comprised the interaction term [inter].

Table 4.3
Hundredth House Model Coefficients and Significance

Variable	Coefficient	t-stat	Significance
ranknco	0.32	0.39	no
rankoff	3.58	3.7	>99%
depoldev	0.93	0.77	no
inter	-3.15	-2.13	>95%
prtot	0.45	5.6	>99%

Influential points and other threats to statistical validity

We conducted standard model diagnostics to check for linearity, constant variance, influential points¹⁰⁷, and multicollinearity¹⁰⁸. No changes were made to the

¹⁰⁶ In this form of regression modeling, a specific group of data must make up the constant that is the value that all other effects are contrasted against. For my model, I selected how all other group types would compare to a junior enlisted soldier with no previous deployments.

¹⁰⁷ There were 11 influential points identified by using CooksD and DFBeta statistical tools. The model was run without these 11 points with no material change in estimate signs, coefficients, or statistical significance. Because there were no apparent inconsistencies in data collection or transfer techniques and therefore no indication that the observations were errors, and the original model estimates were not materially different from the reduced model estimates, I did not delete the influential observations. The interested reader can go to Appendix K to see the complete influential point analysis.

final model as a result of conducting these analyses. For the details regarding how these threats to statistical validity were assessed and addressed, please refer to Appendix M.

Analysis of final regression model - “Push” knowledge delivery showed improvement in individual-level knowledge gained

To determine if the treatment worked using the pre- and post-tests I developed, the predicted scores from the regression coefficients¹⁰⁹ were compared to the pretest scores. Table 4.4 shows the predicted post-treatment scores, pretest scores, and gains due to training (the difference between the two scores) for the four main cohorts of soldiers that were modeled. As can be seen in the third row of Table 4.4, all cohorts who participated in the Hundredth House training received a positive benefit, although not all cohorts benefitted equally. Officers improved scores by 4.8 points on average, junior enlisted by 3.5 points, NCOs with Afghanistan or pre-2006 Iraq experience by 1.1 points, and NCOs with no Afghanistan or pre-2006 Iraq experience improved by 3.9 points. The benefits to training were moderately large for most rank cohorts. The results support the conclusion that there were gains to training using a “push” method of delivering knowledge.

Officers benefitted the most from this training. As shown in Table 4.3, the large rankoff coefficient yields an average predicted score of 16.3 on the posttest and an associated average gain of nearly five points for officers as a result of “push” knowledge training using the Hundredth House tool. These officers consisted of second and first lieutenants who had not experienced a year-long deployment to either Iraq or Afghanistan. Three of the 19 junior officers in the sample did have some deployment experience as they had deployed to Iraq for a short period to meet their units toward the end of the unit’s deployment.¹¹⁰ Learning on the 28 point test equated to officers getting

¹⁰⁸ Multicollinearity checks for the linear dependence between covariates. If multicollinearity is present, the model can have inaccurate covariate estimates. This model passed the multicollinearity statistical test, therefore no regression coefficients are miss-estimated as a result of multicollinearity. The interested reader can go to Appendix K to see these results.

¹⁰⁹ Predicted values for the dependent variable can be constructed using the constant and the model regression coefficients. Stata software can easily compute these values; Stata’s calculated values are shown in row 1 of Table 4.4.

¹¹⁰ Three officers with deployment experience is too small of sample to be able to contrast the scores of officers with and without deployment experience.

an additional 28% of the incorrectly answered questions right following the push training.

Noncommissioned officers with no Afghanistan or pre-2006 Iraq experience¹¹¹ scored nearly four points higher on average on the posttest following Hundredth House training. All but one of these individuals had 2006 or later Iraq experience.¹¹² This four point increase translates into getting an additional 19% of the incorrectly answered questions right following the push training.

Junior enlisted scored on average 3.5 points higher on average on the posttest following Hundredth House training which translates into getting an additional 17% of the incorrectly answered questions right following the push training.

Noncommissioned officers with Afghanistan or pre-2006 Iraq experience scored just one point higher on the posttest which equates to getting an additional ~5% of the incorrectly answered questions right following push training.

Table 4.4
Hundredth House Model – Predicted Posttest Scores, Pre-Training Scores, and Gains Due to Training

	Officer	Junior Enlisted	NCO Afghanistan or Pre-2006 Iraq	NCO 2006 or Later Iraq
Predicted Scores	16.3	11.0	9.2	10.9
Pre-test Scores	11.5	7.5	8.2	7.0
Gain Due to Training	4.8	3.5	1.1	3.9

Why did one rank cohort not show meaningful improvement from Hundredth House training when the other three did?

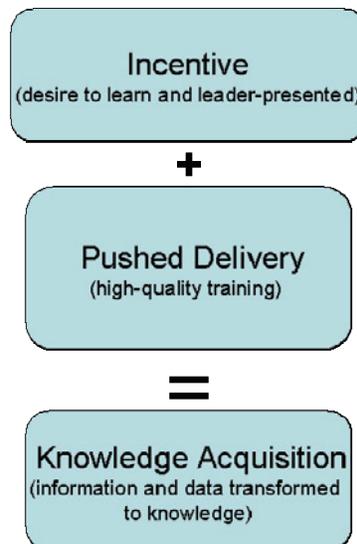
Although this research did not attempt to model why groups benefited unequally from training using the Hundredth House tool, I would be remiss in not trying to provide some possible explanations that could identify potential further research into this outcome.

¹¹¹ Twenty nine of the thirty NCOs in this category had recent Iraq experience. One NCO had no deployment experience. For simplicity and ease in understanding, the cohort titled “no Afghanistan or pre-2006 Iraq” will be called “recent Iraq” in the remainder of the document.

¹¹² Because most NCOs had deployment experience, it was not possible to determine how well the training would work for NCOs with no deployment. However, based on the officer effects, we expect this training would benefit NCOs with no experience.

For junior officers, there were several plausible explanations that might offer insights into why they performed better than NCOs with Afghanistan or pre-2006 Iraq experience following participation in Hundredth House training. One possibility was that junior officers, unlike the NCOs with Afghanistan or pre-2006 Iraq experience, had no deployment experience and felt a very strong desire to learn the material since they would soon be platoon leaders, likely deployed to Iraq or Afghanistan, and responsible for the lives of 30-40 soldiers. This belief that the motivation to learn knowledge influences the quantity and quality of knowledge learned aligns with the need/pull theory (Alavi and Leidner, 1999), (Manville and Foote, 1996). That is, for learning to occur, a need for the information (pull) must be coupled with the availability (push delivery) of relevant knowledge to the junior leaders to be of value. Figure 4.2 is an adaptation from the Alavai and Leidner (1999) need/pull theory that summarizes the interaction between the incentives to learn, the push delivery of high quality information, and the acquisition of knowledge.

Figure 4.2
Knowledge Acquisition Model



For junior officers in this study both the need and availability were present. Another possible explanation for their large demonstrated learning compared to the NCOs with Afghanistan or pre-2006 Iraq experience was that these officers were conducting training

facilitated by their immediate senior rater¹¹³ in the Army. This likely increased their incentive to learn and may have influenced their degree of focus, attention, and participation during the training session. Finally, the result could have been simply attributed to test-taking strategies. Officers must earn a college degree as part of commissioning¹¹⁴ and therefore on average would have been more accustomed to taking tests and presumably have refined test-taking skills as compared to enlisted personnel.

Junior enlisted showed a 3.5 point increase following training. The most plausible explanation for this increase compared to the small increase shown by NCOs with Afghanistan or pre-2006 Iraq experience was aligned with that of the junior officers: They were young soldiers with no previous deployment experience who were motivated to learn and therefore were focused on receiving training that will help them in combat.

Finally, the cohort of NCOs who had deployed to Iraq since 2006¹¹⁵ showed meaningful improvement on pre- to post-test scores compared to the NCO cohort who had previous Afghanistan or pre-2006 Iraq experience. There are two plausible explanations for the former's nearly four point improvement compared to the latter's one point improvement. The first is that all but one of the former's noncommissioned officers had recent Iraq experience. The Hundredth House training was very closely aligned with what they likely experienced during their recent Iraq deployment. As such, these NCOs may have ascribed higher value/relevance to the Hundredth House training while it was taking place than the NCOs who had Afghanistan or pre-2006 Iraq experience and therefore focused more attention on the instruction and then the associated assessment. Another possible explanation for the large increase in score from pre- to post-test for the NCO cohort with recent Iraq experience ties back to the point

¹¹³ An officer has a rater who is an immediate supervisor and then a senior rater who is their rater's supervisor. This officer serving as the senior rater determines a junior officer's duty positions within the unit, provides performance counseling, and writes the section of the officer evaluation report that will determine promotion and schooling opportunities for that junior officer. In short, officers have an increased incentive to perform well in front of their senior rater.

¹¹⁴ There are certain exceptions where officers can be commissioned with an Associate's degree and complete their Bachelor's degree during the early stages of their careers, however, this is a very small percentage of the officer population.

¹¹⁵ The reader is reminded that this cohort was originally identified as those NCOs with no Afghanistan or pre-2006 Iraq deployment experience. Because 29 of 30 of these NCOs had recent Iraq experience and one NCO had no deployment experience I decided for simplicity to call them NCOs with recent Iraq experience.

made previously that officers that just completed college are better test takers. The NCOs with recent Iraq experience scored 5.5 points lower on the pretest than the officers and lower than every other cohort including junior enlisted and NCOs with Afghanistan or pre-2006 Iraq experience. This may have occurred because of less-refined test-taking skills or less-focused attention on the pretest. As the training proceeded, these NCOs may have compensated for their initial test-taking weakness through increased focus on the material. Additionally, as training progressed, these NCOs may have associated added relevance and value to the training methods and delivery techniques. As a result, their level of attention may have increased and their performance on the posttest reflected this. In contrast, the NCOs who had deployed to Afghanistan or pre-2006 Iraq may have felt confident in their abilities gained from previous experience and therefore failed to pay attention and absorb the knowledge/training, or they may have consciously decided that their experience was a better model to follow/adopt than the techniques being conveyed as part of the Hundredth House training. Either explanation would explain the very small increase in posttest scores associated with this cohort of NCOs.

Again, we highlight the possibility of a motivated need coupled with a directed push as being the force behind the improvement in post-test scores. The NCOs with recent Iraq experience may have possessed both the motivated need and the directed push leading to their improvement, while the NCOs with Afghanistan or pre-2006 Iraq may have experienced the directed push without accepting or internalizing the corresponding motivated need leading to their marginal improvement.

Why were benefits to training generally smaller than had been anticipated?

Despite our research teams' best intentions to develop a test that accurately assessed demonstrated pre- to post-training knowledge gains, the goal was difficult to achieve and fraught with potential stumbling blocks. One of the challenges in creating an assessment for a training tool like the Hundredth House was that there were in fact no unique correct answers. As a result, our team chose to use a criterion referenced model in that each battalion commander's responses determined the trainees' correct answers. We would have preferred to have piloted the test instrument prior to the actual experiment as is common in many studies such as this one. Such a process would have

improved the quality, and in turn reliability, of the instrument. However, such a process was not possible due to practical considerations. Both of these challenges introduced the potential for smaller demonstrated, measured gains than the true learning that could have been attained during the training. While the gains may appear to some to be only moderate, given the challenges of this assessment and the statistically significant results obtained, we believe they were sufficiently large to support the value of the “push” training tool. I elaborate on the possible benefit of expanding push methods in the final chapter.

Who would benefit most from this training?

Table 4.5 lists five factors that help determine the acceptance of push delivery of information across the four rank cohorts of soldiers. Table 4.5 is a summary of the following discussion of who would benefit from push delivery of training and how to expand the potential beneficiary pool to all cohorts.

**Table 4.5
Factors That Influence Acceptance of Push Delivery of Training by Cohorts**

	Junior Officer	Junior Enlisted	NCO Afghanistan or Pre 2006 Iraq	NCO 2006 or later Iraq
Minimal (none or old) deployment experience	X	X	X	
Preparing for deployment (internal motivation - need for knowledge)	X	X	X	X
Confidence level - High			X	X
Push delivery - accepted at face value	X	X		X
Push delivery - acceptance requires senior leader promotion and support			X	

The training needs and most beneficial delivery methods for each cohort of soldiers should be assessed as training is planned and delivered. The results showed that soldiers with no deployment experience (officers and junior enlisted) had strong gains in conjunction with the “push” knowledge delivery methods associated with the Hundredth House training. I believe that push delivered training should be considered for these cohorts of entry level soldiers and officers who are preparing for deployment and therefore have both the need/desire to learn and the availability of synthesized data that is

pushed to them. These cohorts integrate the key elements of strategy need (motivation to learn) and technology push (directed, relevant training delivered) to show gains in knowledge.

I also believe that this push delivery of training could also be beneficial for those with past deployment experience as long as the value and relevance of the information (coming from recent combat experiences) is highlighted so that these soldiers with more experience feel they will learn something of value for their deployment. This may be more easily achieved if facilitators within the organization were apprised of which rank and deployment-experience cohorts might need more deliberate references to the value and relevance of the training so that these cohorts could be targeted with additional reinforcement of the training's value and relevance.

Noncommissioned officers with recent Iraq experience also exhibited gains from the "push" delivery associated with Hundredth House training. It is likely that the training was more aligned with their recent prior experiences and so they may have been more inclined to accept the lessons learned during the training. This cohort is also a good candidate for receiving the Hundredth House training using the push delivery method.

The NCOs with Afghanistan or pre-2006 experience gained the least from the Hundredth House training. Further research should be done to determine why their gains were minimal. If, as hypothesized earlier, gains were minimal because the confidence of NCOs with this experience led to their discounting the value of this training and therefore their attention waned, or that these NCOs consciously chose to retain their techniques rather than those being taught because they thought theirs were better. Then it is possible that a more deliberate introduction to the training that highlights that the data were gleaned from recent combat returnees and promotes its value especially for those with no or recent deployment experience may help elicit more interest and better gains to training.

STUDY II: IRAQ COMMON EVENTS HANDBOOK – COLLECTIVE-LEVEL LEARNING ASSOCIATED WITH “ADAPTIVE-PUSH” DELIVERY TOOL

“Adaptive-push” knowledge delivery hypothesized to improve unit-level performance

The relationship between “adaptive-push” knowledge delivery and increased unit performance was hypothesized to be positive in part because the conditions of appropriate incentives to learn and high quality content existed. Because these units were all preparing for deployment, we hypothesized that they were all motivated to improve their performance and therefore would incorporate the handbook into training plans, gather and maintain tools and equipment, and review handbook checklists prior to operations. The belief was that soldiers and units would be motivated to learn tools and techniques that were identified by combat-returnees as successful practices and that would help them perform tasks associated with common events routinely faced by soldiers in Iraq. Hence soldiers had internal incentives in place to satisfy the need/pull component of knowledge transfer highlighted in the literature (Alavi and Leidner, 1999) (Manville and Foote, 1996). The expectation was that internally motivated leaders whose units received the “adaptive-push” training associated with the Iraq Common Events Approaches Handbook would attain higher scores on CTC assessments, unit-level organizational performance gain, than units that had not received the handbook.

Iraq Common Event Approaches Handbook summary statistics

Summary statistics for the Iraq Common Event Approaches Handbook assessments are provided in Table 4.6. The table contains the average observer questionnaire scores, standard deviations, and number of valid cases observed for the variables of interest in the model. These variables included treatment, event, site, training day assessed, and experience of the observer. As can be seen in the table, the average questionnaire score for the treatment (2.86) was larger than the average performance score for every other variable. Additionally, the number of total platoon-level observations (N = 1084) provided a robust dataset for analysis.¹¹⁶ In the next section, I describe the variables I aggregated and the interaction terms I created to run the full preliminary model.

¹¹⁶ The number of total observations is the sum of the treatment = 1 and treatment = 0 cases in the first two rows of Table 4.6.

Table 4.6
Iraq Common Event Approaches Summary Statistics – Average Scores by Variables

Variable	Average Score	SD	n
Treatment =1 (Handbook)	2.86	0.77	422
Treatment =0 (No Handbook)	2.45	0.8	662
Form_300 (Possible IED)	2.62	0.84	139
Form_301 (Quick Reaction Force)	2.80	0.87	104
Form_302 (Dismounted Patrol)	2.50	0.81	111
Form_303 (Rules of Engagement)	2.60	0.86	152
Form_304 (Conduct Checkpoint)	2.62	0.74	97
Form_305 (React to Indirect Fire)	2.42	0.77	102
Form_306 (Cordon & Search)	2.60	0.72	112
Form_307 (Raid with Iraqi Army)	2.77	0.81	89
Form_308 (Secure Meeting Site)	2.55	0.84	109
Form_309 (Consequence Mgmt)	2.66	0.79	69
Site - JRTC	2.55	0.74	150
Site - NTC	2.62	0.83	934
gp1_td (Assessment Training days 1-4)	2.52	0.84	425
gp2_td (Assessment Training days 5-9)	2.55	0.80	380
gp3_td (Assessment Training days 10-15)	2.62	0.72	134
Experience (>=4 rotations as observer)	2.59	0.80	569

Variable construction and preliminary regression results

As described in the last section, the data collected and analyzed to conduct these analyses consisted of treatment, event, site, training day assessed, and experience of the observer as shown in Table 4.6. Treatment was a categorical variable that identified if the unit received the handbook. Form_300 to Form_309 were 10 categorical variables that identified what training event was conducted. Site was a categorical variable that identified if the assessment occurred at NTC or JRTC. The CTC rotation training day (1-15) was collected. We collapsed the training day data into three groups representing natural break points within the training rotation, early (training days 1-4) [gp1_td], middle (training days 5-9) [gp2_td] and late (training days 10-15) [gp3_td]. Interaction terms were also introduced to test the significance of treatment and the training day group interaction (treatment * gp1_td-gp3_td). Additionally, to test the significance of treatment on each individual event form, interaction terms between treatment and form were also modeled (treatment * Form_300-Form309). My intent behind this model was to assess the main effect (treatment) while controlling for the above mentioned variables. I used Stata statistical software to perform regression analyses to estimate the models.

Because platoon assessments on multiple events resulted in observations within companies not being wholly independent, I used a regression clustering technique¹¹⁷ to ensure unbiased coefficients. The regression clustering technique clustered around companies (observations independent across companies but not necessarily within companies). The initial regression model's coefficients, t-statistics, and annotation of significance for all variables described in the previous section are in Table 4.7. In this full model, average total score [avgtotscr] was the dependent variable and all variables in Table 4.7 were estimated. In this full model, the main effect (treatment) was not statistically significant; only training day groups one and two were significant. Because so many variables in the full model were not statistically significant and treatment is the variable of interest, I progressively deleted various variables from the model. I first removed the treatment interaction terms because I believed that as modeled, they were weak predictors of performance and the coefficients were affecting the treatment estimates. Because they were not statistically significant, site and observer experience (to control for the relative experience level of the observer – indicator variable if observer had completed 4 or more rotations) also were removed from subsequent models. The revised final regression model is described in the next section.

¹¹⁷ A modified version of Stata regression software's explanation for how clustering is implemented is provided. Cluster(unitcode) specifies that the observations are independent across groups (companies), but not necessarily within groups. In this model, the unitcode provides a unique hierarchical identifier for each platoon and its associated company, battalion, and brigade. The cluster(unitcode) command clusters around companies ensuring that the lack of independence between subordinate platoons does not bias the estimated coefficients. The Cluster() command affects the estimated standard errors and variance-covariance matrix of the estimators (VCE), but not the estimated coefficients.

Table 4.7
Iraq Common Event Approaches Handbook Regression model – weak explanatory power of interaction variables

Full Preliminary Model			
Variable	Coefficient	t-stat	Sig
treatment	0.37	1.34	no
F_form_301 (Quick Reaction Force)	0.16	1.33	no
F_form_302 (Dismounted Patrol)	-0.18	-1.73	no
F_form_303 (Rules of Engagement)	-0.01	-0.08	no
F_form_304 (Conduct Checkpoint)	0.03	0.28	no
F_form_305 (React to Indirect Fire)	-0.18	-1.37	no
F_form_306 (Cordon & Search)	0.05	0.49	no
F_form_307 (Raid with Iraqi Army)	0.16	1.54	no
F_form_308 (Secure Meeting Site)	-0.07	-0.65	no
F_form_309 (Consequence Mgmt)	0.11	1.09	no
gp1_td (Assessed training days 1-4)	-0.45	-3.45	>99%
gp2_td (Assessed training days 5-9)	-0.33	-2.72	>99%
site NTC =1	-0.01	-0.06	no
exp4 observer with >=4 rotations	-0.01	0.34	no
daytreat1 gp1_td * Treatment	0.08	0.27	no
daytreat2 gp2_td * Treatment	-0.06	-0.19	no
daytreat3 gp3_td * Treatment	-0.42	-1.44	no
treat301 Treatment * Form 301	-0.12	-0.64	no
treat302 Treatment * Form 302	0.12	0.70	no
treat303 Treatment * Form 303	0.01	0.04	no
treat304 Treatment * Form 304	-0.08	-0.53	no
treat305 Treatment * Form 305	-0.20	-0.94	no
treat306 Treatment * Form 306	-0.12	-0.81	no
treat307 Treatment * Form 307	0.00	0.00	no
treat308 Treatment * Form 308	-0.13	-0.77	no
treat309 Treatment * Form 309	-0.19	-1.10	no
Adj R ² = 0.12			

The best fit model and parameters defined

Figure 4.3 depicts the regression model that provided the best explanatory power for the Iraq Common Events Approaches Training Handbook data. Figure 4.3 includes the regression model with avgtotscr as the dependent variable on the left hand side, and main effect variable treatment and covariates forms and training days on the right hand side. The figure also provides short descriptions of the terms.

Figure 4.3
Iraq Common Events Approaches Handbook best fit regression model parameters

$$Y_{avgtotscr} = \beta_0 + \beta_{treatment}x_{treatment} + \beta_{F_form_301-309}x_{F_form_301-309} + \beta_{gp1_td}x_{gp1_td} + \beta_{gp2_td}x_{gp2_td} + \varepsilon$$

$Y_{avgtotscr}$ - Average total score for three components of assessment: common actions, events execution, and tools/equipment.

β_0 - Constant(control unit evaluated on event 300 [IED] and gp3_td during training days 10-15).

$\beta_{treatment}$ - Regression coefficient associated with indicator variable treatment (received handbook).

$x_{treatment}$ -Indicator variable for unit that received the handbook.

$\beta_{F_form_300-309}$ - Regression coefficient associated with indicator variable for events 300-309 (Appendix I).

$x_{F_form_300-309}$ - Indicator variable for events 300-309 (Appendix I).

β_{gp1_td} - Regression coefficient associated with indicator variable gp3_td.

x_{gp1_td} - Indicator variable for assessment conducted on td10 or later.

β_{gp2_td} - Regression coefficient associated with indicator variable gp3_td.

x_{gp2_td} - Indicator variable for assessment conducted on td10 or later.

ε - Error term

Iraq Common Events Approaches regression – model output and analyses

The final model, again using clustering, as shown in Table 4.8, predicted the average total score [avgtotscr] as a function of [treatment], the event assessment form [F_form_301-F_form309], and the training day grouping denoting the range of training days in which the event assessment occurred [gp1_td – gp2_td]. Table 4.8 contains the regression coefficients, t-statistics, and significance annotation for the variables in this model.

The treatment variable had a 0.42 coefficient that was statistically significant at a greater than 99% level.¹¹⁸ This demonstrated treatment effect of .42 points is moderately large. Although the assessment scale ranged from zero to five, scores of zero and five were relatively uncommon occurrences which resulted in an “effective” assessment scale of one to four. In perspective, this equates to a nearly half point treatment effect on what was in practical terms a four-point scale. Of the nine listed forms variables, only indirect fire (form 305) (-0.27) and conduct raid with Iraqi security forces (form 307) (0.16) were significant at the 95% level. The remaining forms were left in for completeness of the analysis. The variables gp1_td (assessed during training days 1-4) and gp2_td (assessed during training days 5-9) were both negative and significant at the greater than 95% level (-0.34 and -0.28). These results showed that the earlier in the training cycle the assessment took place, the lower the average total score. This makes sense for a number of possible reasons including the spillover effect (any training conducted earlier will benefit subsequent performance). Observer scores on average rise as the training day increases and units approach the end of the exercise.

¹¹⁸ Some would argue that there are a large number of additional variables that should be included to better explain the average total score results. In fact, this likely explains the low R² value found in the final model. Additionally, some may also argue that despite researchers’ best efforts to measure the effects of the handbook on average total score, that imperfect implementation of the handbook by leaders (not assessed in this research) or even a strong implementation effort by leaders could be impacted by the “Muldoon effect” – the impact of individual soldiers capable of “messing up” unit-level event execution and hence results despite possessing training and knowledge to perform to standard. This Muldoon effect cannot be controlled for. Additionally, the Muldoon effect would serve to “hide” the true effects of treatment and would often be used to argue that treatment effects might exist when they are not showing in the results. In this case, statistically significant treatment effects are seen despite the potential for Muldoon effects which only serves to strengthen the case that the handbook positively affects unit-level performance.

Table 4.8
Iraq Common Events Approaches Handbook Model Coefficients and Significance

Final Model			
Variable	Coefficient	t-stat	Sig
treatment (received handbook)	0.42	3.83	>99%
F_form_301 (Quick Reaction Force)	0.09	1.09	no
F_form_302 (Dismounted Patrol)	-0.13	-1.78	no
F_form_303 (Rules of Engagement)	-0.01	-0.17	no
F_form_304 (Conduct Checkpoint)	-0.01	-0.2	no
F_form_305 (React to Indirect Fire)	-0.27	-2.73	99%
F_form_306 (Cordon & Search)	-0.02	-0.26	no
F_form_307 (Raid with Iraqi Army)	0.16	2.05	>95%
F_form_308 (Secure Meeting Site)	-0.14	-1.76	no
F_form_309 (Consequence Mgmt)	0.03	0.38	no
gp1_td (Assessed training days 1-4)	-0.34	-3.08	>99%
gp2_td (Assessed training days 5-9)	-0.28	-2.51	99%
Adj R ² = 0.11			

Iraq Common Events Approaches regression – predictive modeling

A score of “3” on the assessment was defined as moderate success on the event. Table 4.9 contains the predicted outcome average scores based on the variable coefficients for the form, the training day grouping, and treatment by cohort. For example, the base case constant of 2.71 in the regression results corresponded to the possible IED event (form 300), training day group 3 (training days 10-15), and control – as confirmed in the bold outlined box in the table. Table 4.9 shows that not only did the treatment effect result in an increase of 0.42 points to average total scores, but that the treatment effect also resulted in seven of ten scores in training day group 3 exceeding the threshold of 3.0 (moderately successful) with two of the other three treatment group averages only missing by one or two hundredths.¹¹⁹

¹¹⁹ Personal communication with RAND researchers using similar scales suggested that a treatment score exceeding 2.5 would mean the unit demonstrated the ability to successfully execute the skill.

Table 4.9
Iraq Common Event Approaches Handbook: Average Total Scores Using Variable Coefficients

Iraq Common Events	Grp1_td (td 1-4)		Grp2_td (td 5-9)		Grp3_td (td 10-15)	
	Treatment	Control	Treatment	Control	Treatment	Control
Form_300 (Possible IED)	2.79	2.37	2.85	2.43	3.13	2.71
Form_301 (Quick Reaction Force)	2.87	2.46	2.94	2.52	3.21	2.80
Form_302 (Dismounted Patrol)	2.66	2.24	2.72	2.30	2.99	2.58
Form_303 (Rules of Engagement)	2.78	2.36	2.84	2.42	3.11	2.70
Form_304 (Conduct Checkpoint)	2.77	2.36	2.84	2.42	3.11	2.70
Form_305 (React to Indirect Fire)	2.52	2.10	2.58	2.17	2.86	2.44
Form_306 (Cordon & Search)	2.77	2.35	2.83	2.41	3.11	2.69
Form_307 (Raid with Iraqi Army)	2.95	2.54	3.01	2.60	3.29	2.87
Form_308 (Secure Meeting Site)	2.65	2.23	2.71	2.29	2.98	2.57
Form_309 (Consequence Mgmt)	2.82	2.40	2.88	2.46	3.16	2.74

 3<=x<4 moderately successful on event
 2<=x<3 somewhat successful on event

Influential points and other threats to statistical validity

Because we identified that a robust estimation method (clustering) to fit our data through regression was necessary, we understood that standard diagnostic checks that assume independent observations (normality) would not be fully appropriate. With these limitations in mind, we conducted diagnostics for linearity, constant variance, influential points¹²⁰, and multicollinearity¹²¹. No changes were made to the final model as a result of conducting these analyses. For the details regarding how these threats to statistical validity were assessed and addressed, please refer to Appendix N.

¹²⁰ Because our observations were not wholly independent, standard influential point diagnostic tools, CooksD and DFBeta, were not available for use. Therefore a modified influential point analysis was conducted by running the regression using our unit code for company level observations [sht_un_cd] multiple times and dropping one company during each regression. This resulted in two observations greater than three standard deviations from the mean one above the mean and one below the mean. Because there were no apparent inconsistencies in data collection or transfer techniques and therefore no indication that the observations were errors, I chose to keep the observations in the model. For a complete description of these analyses, please see Appendix M.

¹²¹ Multicollinearity checks for the linear dependence between covariates. If multicollinearity is present, the model can have inaccurate covariate estimates. This model passed the multicollinearity statistical test, therefore no regression coefficients are miss-estimated as a result of multicollinearity. The interested reader can go to Appendix M to see these results.

Units receiving adaptive-push knowledge delivery showed higher average total scores on assessments than control units

Based on these results, units that received the ICEA handbook outperformed units that did not across all ten common events that units faced at the CTCs during training for deployments to Iraq. The results further showed that assessment later in the CTC rotation also resulted in higher average total scores which we partly attribute to general practice learning, as some items are common within multiple events (e.g. under several events, units are expected to “secure a site” or “conduct information operations”).

Although units with the handbook statistically had higher outcome scores than units that did not have the handbook, I do not assume that all gains should be attributed to the handbook alone. A manipulation check was conducted that collected data by surveying all soldiers who participated in the training. The survey soldiers completed is contained in Table 3.7. The survey consisted of a series of questions that asked if the soldier had ever visited or used the Strykernet website, had participated in a SWfF symposium, had received support from the SWfF staff, or had seen or used the Iraq Common Events Handbook. Soldiers and units that indicated having seen the handbook were five times more likely to have used the Strykernet website (see Appendix L for data and results). These usage results indicated the potential for a synergistic effect in that leaders who were exposed to a quality product developed or provided by the SWfF, were more likely to then avail themselves of other resources made available by SWfF on their website. The adaptive-push may lead to a quality signal that is received by leaders that use the handbook which then resulted in these leaders and their units being more likely to expend resources to assess and use the additional tools made available by the organizations.

Who would benefit from this training?

These results supported the hypothesis that using an adaptive-push delivery would result in increased organizational performance. This delivery method included an interaction between the consumers of information (pullers) and the providers of information (pushers) that resulted in an iterative process of pushers collecting, synthesizing, prioritizing, and then pushing information to users. Based upon these

results, units preparing for deployment could benefit from adoption of this adaptive-push delivery method. In addition, units in other warfighting forums and other similar knowledge management centers could also gain from use of iteratively established training tools that are pushed to consumers for use.

5. CONCLUSIONS, POLICY IMPLICATIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

Army senior leaders have devoted significant resources and energy to developing the concept of the Warfighting Forums. Initially, the WfFs were resourced by borrowing manpower and equipment from other Army organizations on the installation with the belief by senior leaders that the concept was sound and that soldiers and units were benefitting from the availability of the WfF and its tools. As the concept continued to mature, authorizations were established to resource the Stryker Warfighting Forum (and other WfFs) to serve as knowledge and expertise repositories with the goal of enhancing performance of using units. With these dedicated resources for the WfFs came the expectation that a unit's performance would improve.

This research examined the gain in knowledge associated with the Hundredth House individual-level training tool that is currently available through the SWfF, and the increased level of organizational performance associated with the Iraq Common Events Approaches Handbook unit-level training tool developed by RAND and available through the SWfF. As senior leaders believed, research showed that soldiers and organizations using WfF tools showed meaningful statistically significant improvements in knowledge gain and organizational performance. Because of the controlled environment, the gain in soldier knowledge following use of the Hundredth House training tool was directly attributed to the SWfF-provided training tools. In the case of the Iraq Common Events Approaches Training Handbook, units that received the handbook outperformed those that did not. We will not assert that this effect was solely due to the use of the handbook¹²², because the results clearly demonstrated that units

¹²² The researchers want to make the distinction here that this research is not designed to compare training outcomes from different types of information delivery modes (e.g. viewing on a screen vs instructor led lectures). This outcome comparison between delivery modes has been extensively researched by Dr Thomas L. Russell, Director Emeritus of the Office of Instructional Telecommunications at North Carolina State University in Raleigh, NC. His collection of over 350 abstracts of studies finds that in the majority of the studies, there is no significant difference in learning based upon method of delivery. His research can be found at <http://www.nosignificantdifference.org/>. My research does not make the claim that one mode or the other of delivering training provides increased performance outcomes, but instead that pushing information that is collected, synthesized, and prioritized to users using a push or

using the handbook were more likely to use other SWfF provided tools. So this combination of SWfF provided training tools may be what resulted in increased unit performance on their CTC assessment.¹²³ These results validated the expectations that were held by the senior leaders and provided empirical results to support the continued expenditure of resources to maintain or expand the availability of push and adaptive-push training tools in the Warfighting Forum program.

This dissertation examined the effectiveness of a current push and a RAND developed adaptive-push knowledge management systems information delivery tools. Based on a review of relevant literature, there appeared to be little consistent empirical research to validate anecdotal beliefs about the value of these training delivery methods. Army sponsored research assessing the value-added contributions of the Stryker Warfighting Forum offered the ideal setting to conduct this dissertation research. Specifically this dissertation empirically assessed the knowledge gained by individuals who used a push method of information delivery and the increases in tactical performance by units who received information via an adaptive-push method of transfer.

RESULTS SUMMARY

Generally, both methods yielded improvements as hypothesized. The assessment of the push delivery tool, the Hundredth House, resulted in meaningful and statistically significant knowledge gains for three of the four cohorts of soldiers that underwent the training. Entry level soldiers (officers and junior enlisted) improved scores the most from pre- to post-testing, but on average all improved some, empirically supporting the value of push delivery of training. The assessment of the adaptive-push delivery tool, the Iraq Common Event Approaches Handbook, also produced meaningful and statistically significant organizational performance increases associated with units that used the handbook to prepare for deployment training. On a nominal point scale of 0 – 5, and an effective point scale of about 1 – 4, platoons that used the handbook scored nearly a half

adaptive-push methodology will improve performance over just making the same material available for them to pull at their discretion.

¹²³ Using data collected on individuals' self-reported use of SWfF tools, individuals who saw the Iraq Common Event Approaches training handbook were five times more likely to visit the Strykernet knowledge repository as individuals who did not see the handbook (Appendix J).

point (.42) higher. These findings provided empirical evidence to support senior Army and DoD leaders' decisions regarding KMS policy decisions, and they suggest possible fruitful avenues of additional research. The following sections will highlight the policy implications associated with the findings of the current research as well as highlight recommended future research to expand these findings and potentially enable concepts to be generalized to a broader consumer including other DoD or government agencies, and private corporations.

POLICY IMPLICATIONS

Adaptive-push could be the KMS tool method for the future

The empirical assessment of adaptive-push information delivery showed organizational performance increased among units. Specifically, all units in this research study had equal access to current Army KM systems; however, units that received an adaptive-push tool specifically tailored to their needs out-performed units that did not receive the handbook. These results suggested that designated organizations responsible for training content development should develop a systematic, interactive process between the consumers of information (the pullers – those that are preparing for the next deployment) and the producers of information (the suppliers – those that are completing a deployment). A system similar to the one developed and detailed in this dissertation¹²⁴ could potentially streamline and improve the quality of relevant information that gets to deploying units.

Specifically, the adaptive-push process being advocated should include some specific steps. First, a method of interaction to develop the appropriate lists of events/issues/challenges that are facing leaders and soldiers in organizations in real-time is necessary. Second, the methodology should include a systematic approach to collecting data on these identified events/issues/challenges from combat-returnees. Third, the information then needs to be synthesized, organized, and targeted for delivery in the form of short, concise, easy to read checklists or reference guides that are specific to the consumer (e.g., units preparing for deployments). Finally, leaders within organizations need to direct the incorporation of these training tools into their unit's

deployment training and preparation plans. Units should routinely be assessed at a CTC (benefits described in detail below).

Current push knowledge delivery techniques could be expanded

The findings suggested that the Hundredth House tool strengthens the tactical knowledge of junior leaders. While this dissertation only assessed this one tactical knowledge training tool, I have no reason to assume that other similar tools would not have similar positive outcomes for knowledge acquisition. However this assumption is predicated on several factors. First, our research team found the Hundredth House to be an engaging, time and event relevant tool that could inform leaders preparing for a deployment. This suggests that tools need to be kept relevant. Second, such relevance, and in turn value, to leaders could be better guaranteed if WfFs' or other Army KMS organizations' staff developed assessment tools of current training modules to conduct continuous assessment of the tool.¹²⁵ Such assessments could provide staff feedback for reconsidering and/or improving training materials. In addition, providing commanders a menu of proven training tools that can be pushed to subordinates to achieve desired training objectives may improve usage rates of these tools.

Expand push and adaptive-push delivery methods

This work provided senior Army leaders empirically derived results to inform their decisions regarding the inclusion of these delivery methods into existing and/or for developing new warfighting forums that support Army programs and centers of excellence. Clearly both of these delivery techniques led to the types of gain that Army leaders and programs want to see from their training community. In addition, units that received information via adaptive-push may have not only benefitted from the handbook, but they were also much more likely to use the other available knowledge repository resources within SWiF.

¹²⁴ See Study IIa in Chapter 3 for a detailed description of the system.

¹²⁵ The assessment of push methodology tools should also include the time- and event-driven pruning, culling, and scrubbing of all training tools and consumer-provided content stored on knowledge repository websites to ensure up to date, timely, relevant tools and information are available to users.

Expand/incorporate adaptive-push to other agencies

This adaptive-push knowledge delivery method could be easily adapted and may be appropriate for organizations that conduct actions that are somewhat repetitive in nature under varying circumstances (the enemy, the environment, or consumers changing their behavior) where learning influences the outcome. Hence, insights from this adaptive-push research can be applied to other organizations within DoD, other government agencies, and potentially private corporations with similar circumstances. The driving factors for generalizability to these additional organizations should be the degree to which the above factors are present (repetitive tasks under varying circumstances where learning can influence outcomes) and that the culture of the organization supports a team-centric approach to learning, problem solving and organizational performance.

RECOMMENDATIONS FOR FUTURE RESEARCH

The goal of further research in this area should be to replicate and explore aspects of the findings of this research by conducting additional studies using similar methods or to expand the research. Areas of expansion could include empirically assessing the how and why the push and adaptive-push methodologies achieve individual-level knowledge gain and unit-level increased performance.

Develop assessment tools for other existing training tools to validate tools and delivery process

The Stryker Warfighting Forum has training tools in addition to the Hundredth House available for commanders to use with training their units. These other tools have no existing corresponding assessment tool to empirically validate the training value achieved with the tool. To confirm that other push tools would yield similar positive results as were found with the Hundredth House assessment and to expand the pool of adaptive-push or push delivery training tools that have been empirically assessed to produce meaningful and statistically significant results, assessment tools could be developed for additional SWfF training tools that are on the Strykernet website. This would serve to:

- validate for the WfF staffs whether the tool's knowledge transfer as indicated by knowledge gain or performance increase was sufficient to make the tool available.
- validate for commanders the expenditure of valuable training time using the tools (they would know the empirical value of the tool's impact on knowledge gain and increased organizational performance before conducting training).
- provide an opportunity for Army leaders to direct further research into the value of adaptive-push and push delivery of training.
- provide the opportunity to for Army leaders to expand research beyond the validation of adaptive-push and push delivery of training to assess how and why learning is achieved using this delivery method.

Fundamentally, we now have validation from this study that push delivery led to soldier knowledge gains and adaptive-push delivery led to increased unit performance. One area to expand the research could be to explore how or why the adaptive-push and push KMS delivery tools show gains in knowledge and performance and what learning theories contribute to these gains.

Conduct additional iterations of adaptive-push delivery and systematic measurement/feedback for ongoing analysis at NTC/JRTC

The results from this study are robust. There were 1084 observations including 422 treatment observations used in conducting the analysis. Given the large sample sizes and the statistically significant positive results seen with this adaptive-push delivery method, we believe that this technique is valuable and the handbook did help units prepare for their CTC rotation and deployments. However, we also believe that the adaptive-push training methodology is a dynamic process that must continue evolving and being assessed to systematically validate its currency. Consider a situation in which the Army in a decade is engaged in another part of the world with a mission, terrain, and enemy very different from Iraq. The handbook developed for this study, would no longer be useful. So the success of this method is to keep it up-to-date. As an example, we

believe that a process similar to the handbook development process (see Chapter 3) should be systematically incorporated that:

- queries deployed soldiers to determine current deployment-relevant routinely-executed events with potentially high resource expenditures (lives, time, or money),
- elicits combat returnees best practices,
- designates WfFs or other agencies to compile, synthesize, and produce a checklist-style handbook with “as of” dates to validate currency,
- provides handbooks systematically to units preparing for deployment, and
- assesses performance at specific intervals during training at CTCs.

The collection of this performance data at CTCs could provide a tremendous data stream to continue validating the value of the adaptive-push methodology while simultaneously assessing/validating the readiness of units to face the most current challenges while deployed on operations.

Expand research to include non-Stryker units and organizations outside the military to validate generalizability of the concept

To further benefit the Army, other Department of Defense Agencies and potentially public and private organizations that depend on the systematic capturing of lessons learned from ongoing operations (whether dynamic or relatively static), additional research could be conducted outside the current SWfF model.

To start with, similar research methods could be used to assess other Army units that are not currently incorporating new vehicles and new tactics, techniques, and procedures. Heavy (mechanized) infantry and armor brigades as well as light (airborne and air assault) brigades could be included in the research to further validate the push and adaptive-push delivery method. The inclusion of the HWfF and IWfF will also serve to validate the value of the delivery method within the other Warfighting Forums and centers of excellence in this deliberate process.

Additionally, research could be expanded to include other organizations within DoD or the public/private domain. Organizations that could benefit the most from this

stream of research are those organizations where individuals or teams encounter dynamic situations that require immediate decisions. The encounters could be against a(n):

- real thinking antagonist (police response steps to lawbreakers in certain “event” situations),
- environmental antagonist (fire or emergency medical personnel responses to fires and natural disasters in certain “event” situations),
- system antagonist (private corporation response to equipment safety issues in certain “event” situations).

RAND researchers are currently reviewing the adaptive-push methodology for inclusion into a RAND research project focused on public health emergency preparedness. This opportunity to collect assessment data on the outcomes using the adaptive-push methodology in a non-military environment should be pursued to provide data on the generalizability of the adaptive-push methodology.

CONCLUSION

This dissertation found positive and statistically significant relationships between soldiers that received training via a push delivery method and soldier knowledge gain and via an adaptive-push method and unit increases performance. These results confirm anecdotal theories by soldiers, leaders, and senior Army leaders concerning the value of the Stryker Warfighting Forum’s existing and potential training tools and delivery methods in contributing to soldier knowledge gain and increased organizational performance. Based upon these results, senior Army leaders could provide guidelines for the establishment of new Warfighting Forums and redirect the focus of existing Forums and centers of excellence to ensure existing and new training tools and methods contribute to measurable knowledge gain and increased performance. Additional research within the Army and other organizations would help to refine the approach and to better understand the KMS theory involved. Finally, in an era where training time competes directly with family time during a soldier’s dwell time, the exhibited improvements in training outcomes associated with using the adaptive-push and push

methodology make their adoption a logical choice: more effective training will decrease the time demands on soldiers in the Army's deployment cycle.

A. HUNDREDTH HOUSE ASSESSMENT PRE- AND POST-TRAINING QUESTIONS

Survey # _____

Hundredth House Questionnaire

This survey is part of a study conducted by the Arroyo Center of the RAND Corporation, a non-profit research institute, in Santa Monica, California. The study is sponsored by I Corps, Fort Lewis, Washington. The goal of the study is to assist the Army to better understand how the Stryker Warfighters' Forum (SWfF) is helping to sustain and improve Stryker Soldier and leader skills capabilities and combat readiness. You have been asked to complete this survey because you are preparing for deployment with a Stryker unit.

Participation in this survey is completely voluntary. You may choose not to fill it out, or to skip any question you would prefer not to answer. You will not be asked to provide information that directly identifies you. We will, however, need to link responses from each respondent's questionnaire prior to receiving Hundredth house training, to responses after receiving the training. To accomplish this link, we will provide each of you a unique identification number located on the first questionnaire that we ask you to complete. We ask you to remember this number and place it on the second questionnaire you will take shortly after completing training. This will provide us the link we need to assess learning associated with the Hundredth house tool while ensuring your responses are anonymous. The estimated time to complete the survey is about 30 minutes.

Your answers will go to the research team at the RAND Corporation, and they will be anonymous: No one will be able to identify them as having come from you. In reporting results of the survey, RAND will combine your responses with those of others in a way that would prevent anyone from deducing what individuals responded.

We urge you to complete this survey. Your participation is very important to the study team's efforts to help units in preparing for the next deployment and to get as complete a picture as possible of the SWfF's contribution to skills capabilities and combat readiness.

If you have any questions about the study or your participation, you may contact RAND's project leader, Bryan Hallmark at (310) 393-0411 ext. 6312, hallmark@rand.org, or assistant leader Jamie Gayton at (310) 393-0411 ext. 7636, jgayton@rand.org.

If you have any questions about your rights as a research participant, you may contact:

Jim Tebow, Co-Administrator
RAND Human Subjects Protection Committee
1776 Main Street M3W
Santa Monica, CA 90407-2138
(310) 393-0411 x7173
James_Tebow@rand.org

What is your current rank?

- | | | | |
|--------------------------|-----------------|--------------------------|-----|
| <input type="checkbox"/> | PVT/PV2/PFC | <input type="checkbox"/> | 2LT |
| <input type="checkbox"/> | SPC/Corporal | <input type="checkbox"/> | 1LT |
| <input type="checkbox"/> | SGT | <input type="checkbox"/> | CPT |
| <input type="checkbox"/> | SSG | <input type="checkbox"/> | MAJ |
| <input type="checkbox"/> | SFC | <input type="checkbox"/> | LTC |
| <input type="checkbox"/> | MSG/1SG/SGM/CSM | | |

Please select all the operations for which you have deployed. Select the box that shows the date you **started** the deployment. For instance, if you were deployed from January 2005 to January 2006, you would mark OIF 2005 (not 2006). If you were deployed from June 2006 to September 2007, you would mark OIF 2006 (not 2007). There should be **one** mark for each deployment.

- | | | | |
|---|----------|---|----------|
| 0 | OEF 2001 | 0 | OIF 2003 |
| 0 | OEF 2002 | 0 | OIF 2004 |
| 0 | OEF 2003 | 0 | OIF 2005 |
| 0 | OEF 2004 | 0 | OIF 2006 |
| 0 | OEF 2005 | 0 | OIF 2007 |
| 0 | OEF 2006 | 0 | OIF 2008 |
| 0 | OEF 2007 | | |
| 0 | OEF 2008 | | |

Note that all following questions will ask you to either:

- 1) Rank order your responses – you will see a _____ for each ranking
- 2) Mark an X in the for your **one** best answer – you will see a
- 3) Mark a ✓ in the 0 for **all** responses that apply – you will see a 0
- 4) Circle your unit's most likely response – You will see A B C D E

1. Rank order the list of five possible reactions by how likely they are to occur when **high-level** insurgents such as Al Qaeda have no avenue for their escape/withdrawal? (1 is most likely and 5 is least likely.)

____ surrender
____ fight to kill some coalition forces and then surrender
____ fight to the finish
____ commit suicide before being taken prisoner
____ use weapons/explosives to kill as many as possible including self (become a martyr)

2. Rank order the list of five possible reactions by how likely they are to occur when **low-level** terrorists/insurgents such as local Sunni or Shia groups have no avenue for their escape/withdrawal? (1 is most likely and 5 is least likely.)

____ surrender
____ fight to kill some coalition forces and then surrender
____ fight to the finish
____ commit suicide before being taken prisoner
____ use weapons/explosives to kill as many as possible including self (become a martyr)

3. How important is it to be familiar with insurgent/terrorist tactics, techniques, and procedures in specific neighborhoods before conducting operations there? (Mark an X in the for your **one** best answer.)

extremely
 somewhat
 neither important or unimportant
 somewhat unimportant
 unimportant

4. How important is it to be aware of the specific ethnic/religious breakdown in a neighborhood before conducting operations there? (Mark an X in the for your **one** best answer.)

extremely
 somewhat
 neither important or unimportant
 somewhat unimportant
 unimportant

5. What should we assume that the enemies (insurgents/terrorists) know about our actions?
(Mark an X in the for your **one** best answer.)

- they know very little about our routes, TTPs and missions because we are good at changing up our operations
- they might know typical routes and stopping points in neighborhoods but not our TTPs for conducting operations
- they are constantly trying to learn our TTPs from watching our actions on objectives BUT have no inside knowledge of and therefore cannot anticipate our missions
- they know our TTPs and get **some** information about upcoming missions
- they know our TTPs and have “insiders” who routinely provide information about upcoming missions

Questions 6 – 9 are examples where you need to decide to what extent enemy actions and Iraqi Army (IA)/Iraqi Police (IP) requests would determine your unit's level of response in a given situation? Use one of the following five possible US unit actions for your answers to questions 6-9.

- A. Do not enter right now. Call for back-up/QRF and possibly UAS/CAS. Engage local IPs for information. Call local Iraqi leaders for information.
 - B. Collect face-to-face information from IPs that initially reported the incident. Assess the situation and if story makes sense, offer to provide overwatch and QRF support to IP unit. Resist taking over the mission.
 - C. Collect face-to face information from IPs that initially reported the incident. Assess the situation and if story makes sense, and they request, assume the mission.
 - D. Enter immediately to extract the escaped detainee. Back off/regroup only if insurgents elevate level of fight to include machine gun fire, explosives, or comparable.
 - E. Enter immediately to extract the escaped detainee. It is critical to get the detainee to save face with insurgents and IPs – do not withdraw without capturing the escaped detainee.
6. A Stryker patrol receives a report from partner IPs that an escaped detainee is in a house/building and that the IPs receive **un-aimed** small arms fire (SAF) from the building when trying to enter. (Please circle your unit's most likely response.)
- A B C D E
7. A Stryker patrol receives a report from partner IPs that an escaped detainee is in a house/building and that the IPs receive **aimed** SAF from the building when trying to enter. (Please circle your unit's most likely response.)
- A B C D E
8. A Stryker patrol receives a report from partner IPs that an escaped detainee is in a house/building and that the IPs received **machine gun fire** from the building and sustained two casualties from a grenade that was tossed by the entrance gate when trying to enter. (Please circle your unit's most likely response.)
- A B C D E

9. A Stryker patrol receives a report from partner IPs that an escaped detainee is in a house/building and that the IPs received un-aimed gunfire from the building. By the time coalition forces arrived, no fire had been taken in over an hour. (Please circle your unit's most likely response.)
- A B C D E
10. Place a check mark next to ALL of the weapons that if used by an insurgent/terrorist organization would necessitate a platoon requesting back-up/overwatch before completing an ongoing (approved) mission? (Mark a ✓ in the 0 for all responses that apply.)
- Rocks, bricks, or sticks are thrown from vehicles or buildings
 - Molotov cocktail-like weapons (hand propelled)
 - Un-aimed small arms fire
 - Aimed small arms fire
 - Grenades, fabricated IEDs, or RPG-type weapons
 - Machine gun fire
11. Please place a check mark next to ALL of the items that represent the “tell-tale” signs of Al Qaeda involvement in an insurgent/terrorist operation associated with a building, house, or structure? (Mark a ✓ in the 0 for all responses that apply.)
- Rocks, bricks, or sticks are thrown from vehicles or buildings
 - Molotov cocktail-like weapons (hand propelled)
 - Un-aimed small arms fire
 - Aimed small arms fire
 - Grenades, fabricated IEDs, or RPG-type weapons
 - Machine gun fire.
 - Extended engagements
 - Supporting fringe attacks
 - Dialogue/demands made to coalition leaders
 - When questioned, neighbors can provide names and occupations of house inhabitants

12. If your or one of your subordinate units has taken 20% or more casualties in attacks from a building/structure, check the **one** best answer below to describe under what conditions the unit being attacked is justified in engaging with direct fire from UAS, helicopter gunships, or CAS? (Mark an X in the for your **one** best answer.)
- Always, based upon typical standing ROE
 - If we cleared attack with higher HQ according to release authority in standing orders
 - If cleared by higher and only if no or virtually no collateral damage is likely to be realized
 - We might be justified but must consider the ROE and whether our decision could pass the test of the “court of professional and public scrutiny” following the action
 - We would never be justified in using this type of force against a building. Other means could always be used to minimize casualties and collateral damage
13. Consider an Iraq deployment where a unit experiences the same set of enemy actions during every raid or house search for multiple months. Select the **one** best choice below regarding if the unit should change its SOP. (Mark an X in the for your **one** best answer.)
- No, we should develop an SOP and stick to it.
 - Maybe, we must weigh the benefits of updated SOPs and TTPs against the costs of having soldiers confused about current/correct battledrills and SOPs.
 - Yes, a unit should conduct AARs following missions and immediately incorporate changes that could benefit mission success or safety of soldiers.
 - Yes, but units should adapt SOPs over time to ensure that the SOP will prevail for the “likely” insurgent course of action.
 - Yes, but units should adapt SOPs over time to ensure the SOP will prevail against the “most dangerous” insurgent course of action.
14. Select any of the following conditions that **would** influence you to take offensive action faster than you would if the condition was not present? (Mark a ✓ in the 0 for all responses that apply.)
- You have taken casualties but are not taking fire currently.
 - You are exactly 1 hour from completing your patrol.
 - You currently have UAS support but may lose it at any time.
 - You currently have Helo gunship support for a short time.
 - Supporting fringe attacks.
 - You currently have CAS support for a short time.
 - You currently have IA support for a short time.

15. How many soldiers in your squad would you try to get combat lifesaver (CLS) qualified/trained prior to deployment? (Mark an X in the for your **one** best answer.)
- One per squad
 - One per team
 - 50% of squad
 - 75% of squad
 - 100% of squad
16. A Stryker platoon receives a request for support from IPs who are being engaged by suspected insurgents from inside a house. Upon arriving, the platoon leader gets fully briefed by the IPs, develops a course of action, and starts to execute his plan. As a squad from the platoon prepares to enter the house, a soldier from your support force and a soldier from your clearance force become casualties to SAF and grenades. The situation is **NOT** going well. When a higher commander arrives at the scene of this operation, he should (mark an X in the for your **one** best answer):
- Relieve the platoon leader for exhibiting poor judgment in deciding to enter the house.
 - Allow the platoon leader to continue being in command of the operation/situation.
 - Immediately assume command of the operation/situation.
 - Get briefed by key personnel/leaders and assume command of the operation as soon as he has sufficient situational awareness.
17. A Stryker platoon receives a request for support from IPs who are being engaged by suspected insurgents from inside a house. Upon arriving, the platoon leader gets fully briefed by the IPs, develops a course of action, and starts to execute his plan. As a squad from the platoon prepares to enter the house, insurgents begin firing again but the unit takes no casualties as the operation begins. The situation appears to be going well. When a higher commander arrives at the scene of this operation, he should (mark an X in the for your **one** best answer):
- Relieve the platoon leader for exhibiting poor judgment in deciding to enter the house.
 - Allow the platoon leader to continue being in command of the operation/situation.
 - Immediately assume command of the operation/situation.
 - Get briefed by key personnel/leaders and assume command of the operation as soon as he has sufficient situational awareness.

18. You are asked to partner with an IP unit. Rank order the list of items below concerning what you should know about the IP unit you will partner with. (1 is most important and 6 is least important.)
- _____ IP unit's training levels for insurgent-type missions
 - _____ IP unit's tactics for conducting insurgent-type missions
 - _____ IP unit's previous experience conducting joint (IA/coalition) operations
 - _____ Ethnic/religious breakdown within the IP unit's ranks
 - _____ Weapons/equipment IP unit currently has
 - _____ Background information about the IP unit, including OPSEC trustworthiness, from a coalition unit that has worked with the IP unit
19. You have a partnership with an IP unit and they call for help on a mission. (Mark an X in the for your **one** best answer.)
- Not conduct the operation/provide support.
 - Request information from them before conducting the operation/providing support.
 - Request information from them and corroborate with some additional (coalition) intelligence before conducting the operation/providing support.
 - Immediately conduct the operation/provide support – they are your partners.
20. You have a partnership with an IP unit and they call for help on a mission. If they requested, what level of support would you be willing to provide? (Mark a ✓ in the 0 for all responses that apply.)
- UAS/CAS/Helo video or intelligence support.
 - UAS/CAS/Helo direct fire support.
 - QRF type support (back-up).
 - A unit to integrate and conduct a joint mission with the IPs.
 - Assume command of the situation and complete the mission for them.
21. Where should teams conduct final checks and establish their stack formation prior to building/house clearing operations. (Mark an X in the for your **one** best answer.)
- Against the building/house in best covered/concealed position available.
 - Against the fence surrounding the building/house.
 - Behind an overwatch Stryker vehicle that offers cover and concealment.
 - Far enough away to be out of range of hand propelled (thrown) explosives and “covered” from direct fire weapons.
 - Far enough away to eliminate all risk of enemy action.

22. At squad-level, rank order who is in the best position to provide status reports to platoon leadership during an operation. (1 is best position and 5 is least best position.)

_____ Squad leader
_____ Team leader
_____ Member of squad
_____ Stryker turret gunner
_____ Stryker driver

23. Rank order who should be providing status reports to company leadership during an operation. (1 is best person and 8 is least best person.)

_____ Platoon leader
_____ Platoon sergeant
_____ Squad leader
_____ Team leader
_____ Stryker turret gunner
_____ Stryker driver
_____ Member of squad
_____ Company HQ element dispatched to the site of the operation

24. Mark the **two** elements of a SALUTE report that could provide the best indicators of whether a platoon should enter and clear a house in a search and apprehend type operation for a high value target. (Mark an X in the for your **two** best answers.)

Size
 Activity
 Location
 Unit
 Time
 Equipment

25. Your unit enters a house and comes under heavy direct fire from covered/concealed positions and sustains casualties. Rank order the list of ways below for your unit to get heavier weapons fire (from organic assets) on the objective? (1 is your preferred technique and 5 is your least preferred technique.)

_____ Send in a reinforcing team/squad with heavier weapons to engage.
_____ Use massed fires by pinned-down squad to replicate heavier weapons.
_____ Relocate supporting force to better positions to engage.
_____ Have supporting force use grenades/explosives to engage.
_____ Have Stryker vehicle reposition or knock down obstruction to engage.

26. To reduce the number of times subordinate units get sucked into operations they cannot resolve without help, should there be a SOP that establishes for example: un-aimed weapons fire requires platoon or higher involvement, aimed weapons fire requires company or higher involvement, and machine gun fire or use of explosives requires battalion level involvement. (Mark an X in the for your **one** best answer.)
- Yes – SOPs are great tools to ensure mission accomplishment and safety of soldiers.
 - No – this unduly restricts junior leaders by imposing inflexible rules on operations.
27. A platoon planned a raid of a suspected insurgent house and the PL has decision authority to execute the operation. As the operation begins, the lead squad takes casualties while moving into final staging positions for entering the building (through direct fire or explosives from the building). Given these circumstances, check the box next to the ONE best option with respect to making changes in the decision authority for entering the building. (Mark an X in the for your **one** best answer.)
- No, the PL should still make the decision
 - Maybe, the PL should discuss with higher if available but still make the ultimate call.
 - Yes, the authority to launch a mission following a pre-emptive attack by insurgents is enough of a signal to elevate the decision to the next higher level.
 - Yes, this decision should have always been at a higher level regardless of the operation.
28. Assume your unit has been in theater for 5 months. If a **contact** report from a platoon at 0200 states that shots have been fired, what do you think your commander will do? (Mark an X in the for your **one** best answer.)
- Nothing. The commander will probably not be awakened by the RTO or find out about this until the morning.
 - Nothing. If awakened by the RTO, this does not warrant any action at this point.
 - Alert QRF (awake and in vehicles) to be on high alert.
 - Alert Commander's personal security detachment (PSD) team for potential movement to the site.
 - Confirm level of contact with Platoon Leader.
 - Move with PSD team to that location to provide command and control and eyes on for higher command.

29. Assume your unit has been in theater for 5 months. If a **casualty** report from a platoon arrives at the TOC at 0200 (with no details about the casualty), what do you think your commander will do? (Mark a ✓ in the 0 for all responses that apply.)
- Nothing. The commander will probably not be awakened by the RTO or find out about this until the morning.
 - Nothing. If awakened by the RTO, this does not warrant any action at this point.
 - Alert QRF (awake and in vehicles) to be on high alert.
 - Alert Commander's PSD team for potential movement to the site.
 - Confirm level of contact, method of injury, extent of injury, with Platoon Leader.
 - Deploy QRF and alert backup QRF to assume QRF status.
 - Move with PSD team to that location no matter how serious the injury is to provide command and control and eyes on for higher command.
 - Move with PSD team to that location only if risk to life, limb, or eyesight; provide command and control and eyes on for higher command.
30. Assume your unit has been in theater for 5 months. If a **multiple casualty event report** arrives at the TOC at 0200, what do you think your commander will do? (Mark a ✓ in the 0 for all responses that apply.)
- Nothing. This is likely NOT CCIR - so the commander will probably not be awakened by the RTO or find out about this until the morning.
 - Nothing. If awakened by the RTO, this does not warrant any action at this point.
 - Alert QRF (awake and in vehicles) to be on high alert.
 - Alert Commander's PSD team for potential movement to the site.
 - Confirm level of contact, method of injury, extent of injury, with Platoon Leader.
 - Deploy QRF and alert backup QRF to assume QRF status.
 - Move with PSD team to that location no matter how serious the injury is to provide command and control and eyes on for higher command.
 - Move with PSD team to that location only if risk to life, limb, or eyesight; provide command and control and eyes on for higher command.

31. Your unit is conducting a routine patrol. During your patrol pre-brief, you were told that UAS/CAS/Helo gunships would be direct support to the brigade and might be available to your platoon during your patrol. (Mark a ✓ in the 0 for all of the AUTHORITIES that a platoon leader should have in this situation if the assets are available.)
- Ordering additional “eyes on” for a specific location/target.
 - Ordering covering fire (defensive) – fires specifically to extract unit from a firefight or IED ambush, or similar event.
 - Ordering supporting fire (offensive) – fires specifically to support a unit during a counterattack or pursuit following a firefight, ambush, or similar event.
 - Ordering stand-alone response attack – fires in response to earlier attack on unit from house/building that is currently posing no imminent risk and is designed to “level” the house/building and kill all inhabitants.
 - Ordering stand-alone response attack – fires in response to earlier attack on unit from house/building that is currently posing imminent risk to soldiers and is designed to “level” the house/building and kill all inhabitants.
32. Your unit has taken direct fire from a known insurgent house and received one casualty. What do you believe will be your commander’s most important consideration when deciding whether to engage the house with Helo gunships or CAS.) (Mark an X in the for your **one** best answer.)
- Mission accomplishment – the likelihood that using assets will result in kill or capture of those in house/building.
 - Collateral damage – the likelihood that using assets will or will not have direct unintended consequences for equipment or personnel.
 - Information operations - the likely affect of the portrayal of the event on local nationals, coalition forces, Americans at home, and the world.
33. How effective do you think a Helo gun ship would be at delivering fires that would severely injure or kill the inhabitants of a house/building and render the house “unlivable?” (Mark an X in the for your **one** best answer.)
- Very effective – the firepower on these systems assures that they will accomplish the mission every time.
 - Moderately effective – although the odds are very small, there is still a chance that insurgents could survive.
 - Effective – although all insurgents may not be dead, they will all be injured or incapacitated through concussion and shock.
 - Somewhat ineffective – in some cases, inhabitants may survive unharmed and able to continue the fight.
 - Completely ineffective – in many cases, the building will remain intact and inhabitants are will survive to continue the fight.

34. Your unit cleared the first floor of a house/building, killing two insurgents and taking several casualties. You then called in a Helo gun ship strike to kill all inhabitants on the second (top) floor and destroy the house/building. One hour after the Helo gunships reported mission accomplishment, you note that two of the walls had collapsed and no activity or sound had been heard from the building. (Mark an X in the for your **one** best answer.)
- Call in another strike to be sure.
 - Wait another two hours to be sure.
 - Send in available medics with a squad in support to determine if any inhabitants are alive and assess/evacuate casualties
 - Have a squad enter and clear the building using SOP
 - Request an IP or IA unit to enter the building and confirm clear for the information operations victory (they get credit for eliminating insurgents).
 - Have another unit take charge of the operation while you reconsolidate and evacuate earlier casualties.
35. Check the SINGLE most likely type/kind of vehicle that would be the primary medical evacuation vehicle following a casualty producing event in an urban or semi-urban environment? (Mark an X in the for your **one** best answer.)
- Stryker medical evacuation vehicle (MEV) or HMMWV variant ambulance
 - Standard Stryker or HMMWV
 - Helicopter medevac
36. Your unit was attacked with aimed fire and an explosive device from the front of a house/building. Please rank order the following entry point options for entering the house to clear the building and capture/kill the inhabitants. (1 is your most preferred option and 5 is your least preferred option.)
- ___ The front door
 - ___ A rear or side door
 - ___ A window on the first or second floor
 - ___ Multiple points including the front door
 - ___ Multiple points but NOT the front door.
37. Select the best option when involved in an operation for dealing with heavy bleeding from an extremity. (Mark an X in the for your **one** best answer.)
- Get to level I care for medical attention
 - Gauze and direct pressure
 - Bandage wrapped tightly
 - Tourniquet
 - Steri-strips

38. Your Stryker platoon receives a report from IPs while on patrol that a suspected insurgent ran into a neighborhood house. When IPs approached the house, inhabitants fired **un-aimed** SAF. By the time your platoon arrived, there had been no activity from the house in over an hour. As a squad from your platoon established its “stack formation” against the fence of the building for entrance, an explosive was tossed from the building that inflicted two casualties. (Mark an X in the for your **one** best answer.)
- Abort entrance mission. Retreat to cover of Strykers. Cordon street/house. Call for back-up/QRF and possibly UAS/CAS. Engage local IPs and/or IA for information. Call local leaders for information. Call higher provide assessment, ask for guidance, and explain that your platoon can no longer handle this mission.
 - Abort entrance mission. Call higher and ask for additional platoon to serve as cordon force to complete mission. Confirm that you have a good plan and can take out these insurgents, capture the escaped detainee, and can get the guys that hurt your two soldiers if given the opportunity.
 - Regroup. Platoon leader establishes one squad as cordon force, one as back-up, and one to enter house/building. As soon as brief mission/intent is provided, squads take positions and commence operation.
 - Hold ground, ask for back-up team to replace casualties and then continue the mission. Enter the house as soon as possible to get out of the “kill zone.” It is critical to get the detainee and kill or capture all remaining in the house to save face with insurgents and IA/IPs – do not withdraw without capturing the escaped detainee.
 - Continue the mission. Enter the house immediately to get out of the “kill zone.” It is critical to get the detainee and kill or capture all remaining in the house to save face with insurgents and IA/IPs – do not withdraw without capturing the escaped detainee.
39. Select the best type of transition of control that should take place between a platoon-sized QRF and an “engaged” platoon when the QRF arrives on the scene? (Mark an X in the for your **one** best answer.)
- None – engaged unit should extract casualties and depart as fast as possible to save lives.
 - The engaged unit should remain in command and the QRF should be a supporting element.
 - The QRF should assume command and the engaged unit should become supporting element.
 - The engaged unit leader should brief the QRF leader upon arrival. Control should remain with the engaged unit unless its combat effectiveness or medevac requirement preclude.
40. You are the leader and your subordinate unit is in contact and is not providing an adequate quantity of or sufficient detail in status reports. Sequentially order what you should do first, second, etc. (1 is your first action and 5 is last action.)

- Nothing – there must be a reason the unit has not reported. Wait for the unit to send an update.
- Continue to call on the command (higher element's) "push" to demand an update.
- Drop down to the subordinate element's "push" to listen in on the chatter and request an update from someone on the net
- Send out a HQ element to see first hand what is happening and establish status updates with the TOC.
- Take PSD and go to the site personally to gain situational understanding. Use this to report status higher.

41. You are the commander of an engaged unit. You are unable to conduct an ideal battle handover of the situation with the QRF/backup that arrives on the scene. (Rank order the elements to conduct the battle handover. 1 is most important and 11 is least important.)

- Type of weapons engaged with
- Mission
- Number of insurgents
- Duration of engagements (how long each episode of firing lasts)
- Time since last weapons engagement
- Explosives used (e.g., IEDs, grenades)
- Outer cordon positions
- Inner cordon positions
- Involvement of IA/IP in support
- Additional assets available UAS/CAS/Helo, EOD, etc.
- Information operations concerns

42. A company commander prepares his unit for deployment and then commands his company in Iraq for six months. If this company commander could magically make his platoon increase their proficiency in one area, what **ONE** area would he pick? (Mark an X in the for your **one** best answer.)

- Battle drills
- Casualty evacuation/medevac procedures
- Weapons qualification statistics
- Reporting accuracy and timeliness
- Consequence management operations
- ROE enforcement

43. Select **ALL** the conditions in the list below when a cordon should be established around a house/building? When you ... (Mark a ✓ in the 0 for all responses that apply.)
- suspect a person of interest is inside.
 - knock on the door of the house.
 - receive weapons fire from the house.
 - take casualties from actions by house members.
 - decide to enter and clear the house by force.
 - call in air assets (UAS/CAS/Helos) in support.
44. You are partnering with an IP unit. The IP unit receives direct fire from a house that they attempted to enter because an insurgent was believed to be there. They request and you provide support. You and the IPs establish a cordon and are NOT in any imminent danger. Is there any risk to mission success associated with collecting more intelligence from neighbors or the local IA unit before conducting the operation? (Mark an X in the for your **one** best answer.)
- Yes
 - No
45. Your company commander is tasked to plan and conduct a tactical mission within a neighborhood. To what extent should information operations impact mission planning? (Mark an X in the for your **one** best answer.)
- No impact on mission planning – the mission is planned and then we develop the best information operations plan based upon the mission
 - Some impact on mission planning – The mission is planned and then minor changes to the plan may be incorporated after the fact to support information operations objectives
 - Moderate impact on mission planning – information operations objectives should be discussed while developing the mission plan
 - Full impact on mission planning – mission and information operations objectives should be considered equally during the mission development process
 - Total impact – information operations should drive the mission planning/development process
46. If a soldier mentions that executing battle drills at the soldier level in an operation are instinctive, should that be perceived as a good thing? (Mark an X in the for your **one** best answer.)
- Yes, it is good that soldiers know battle drills so well that they can execute them without thinking.
 - No, it is not good since this reduces a soldier's ability to adapt to changing circumstances.

47. If a unit leader (platoon leader or commander) mentions that making decisions at the leader level is instinctive, similar to a soldier's ability to execute battle drills, should that be taken as a good thing? (Mark an X in the for your **one** best answer.)
- Yes, it is good that leaders know battle drills so well that they can "order" appropriate ones to support mission accomplishment without thinking.
 - No, it is not good since this reduces a leader's ability to incorporate different signals, and conditions into his decision-making process.

Leaders are expected to make snap decisions during the course of daily operations in Iraq, whether on a seemingly routine patrol or while conducting planned operations against insurgents. There is often little time for reflection or analysis; instead leaders must rely on their judgment to make decisions in a timely manner.

For Questions 48 –54 You are the leader on the scene. Questions 48 - 54 present you with a chronological, sequence of events that might unfold for a leader in Iraq. At several steps in the sequence, the questions force you to make these types of snap decisions. At each step, no matter what your decision in prior steps/question, you will be forced to make a new decision. The existence of follow-on questions does not in any way imply how previous questions should be answered.

Situation: You have just begun partnering with an IP unit in Iraq. The agreement states you will act as a QRF for the IPs if they get in over their heads. With about 1 hour left on a routine patrol, you receive a call from an IP Commander that they have chased an escaped detainee into a building and have taken AK47 fire.

48. In light of the above situation, do you think you should...
(Mark an X in the for your **one** best answer.)
- not respond because this does not appear to be a QRF mission?
 - respond by traveling to the location?
49. Your Commander orders you to go to the building with the escaped detainee. Upon arrival at the building scene, the only IP present is the IP commander who says that there has been no enemy fire in the last 1 hour and that it is very important that they recapture the escaped detainee who is hiding in the building. Should you...
(Mark an X in the for your **one** best answer.)
- not conduct this search and apprehend mission?
 - conduct this search and apprehend mission?

50. Your Commander orders you to conduct the search and apprehend mission. You brief your squads and have them get into position. The squad in the stack formation by the entrance gate behind the building's perimeter fence gets hit by an explosive device thrown from the building. Two soldiers are injured. Should you...
- (Mark an X in the for your **one** best answer.)
- abort the mission and call for backup?
 - continue the mission and order the squad to enter the house?
51. You are ordered to enter the building. Immediately upon entering the building, a squad takes intense direct fire from a position at the end of the hallway. The squad takes additional casualties and moves into a room off the hallway for protection. Should you...
- (Mark an X in the for your **one** best answer.)
- abort the mission and extract your casualties and soldiers?
 - continue the mission and order the squad to eliminate the position protecting the long hallway?
52. The squad was ordered to eliminate the position protecting the hallway. Afterwards, the squad was able to secure the first floor of the building but sustained additional casualties in the process. At this point should you...
- (Mark an X in the for your **one** best answer.)
- extract casualties and soldiers from the building, wait for back-up/QRF, and continue medevac procedures?
 - continue the mission to clear the second floor and capture the escaped detainee?
53. You were ordered to continue the mission to clear the building. Now you have helicopters on site and must decide how to proceed. Do you...
- (Mark an X in the for your **one** best answer.)
- order another squad to enter the building and clear the second floor to capture the escaped detainee?
 - order the helicopter gunships to attack the building to preclude additional casualties?
54. Your commander ordered the helicopter gunships to attack the building. They cause significant damage to the building. Two of the walls have collapsed. You have heard no gunfire or human voices come from the building since the helicopter attack. Do you ...
- (Mark an X in the for your **one** best answer.)
- wait additional time to confirm there is no activity in the building?
 - order another unit (back-up/QRF has arrived) into the cluttered building to make their way to the second floor?

55. Assume your unit is involved in an operation where you accomplish the mission but you take a significant number of WIAs that must be evacuated and KIAs. Your unit must be rebuilt with elements from the higher unit as well as inbound replacements. Rank order the below list of multiple ways to learn from and cope with a traumatic event like this. (1 would be your most preferred way and 7 your least preferred way.)

- _____ AAR – conducted within the platoon/devastated unit
- _____ AAR – moderated by a higher unit
- _____ AAR – moderated by a mental health or crisis intervention expert
- _____ Counseling – by mental health providers or crisis intervention experts for individuals and small groups
- _____ 15-6 investigation – to validate/invalidate actions
- _____ IG investigation – to review leader decisions
- _____ Safety Center investigation – to review prudence of actions to inform future leaders

B. HUNDREDTH HOUSE ASSESSMENT INSTRUMENT SCORING RUBRIC

The following four sections describe how each type of question (rank order, select one best, select two best, and select all that apply) and associated responses were reviewed, what constituted a correct response, and when necessary, how some requirements were modified for assessing correct responses.

“Rank order” questions

The number of items that subjects ranked ranged from a low of five to a high of eleven. Because of the minimal marginal difference between some of the answer choices and the associated unlikelihood of subjects exactly matching each of the responses that the commanders gave, a strict adherence to exact matches would result in few if any of subjects’ responses being correct. To address this issue, each question was reviewed to assess whether identifying a subset of the commander’s selections should be interpreted as achieving a correct response on the question. On some questions, where differentiation between the middle responses was less relevant than identifying the boundary responses (most likely/important and least likely/important), individuals were assessed with a correct response if their ranks for the boundary items matched the commander’s responses. On other questions where identifying the most likely/important was deemed the most relevant, matching responses between the respondents and the commander on these specific items earned credit for a correct response on the test. Finally, there was one question where the differences between the commanders’ top choices were minimal, however, differences between the three bottom choices were apparent. In this case, a match with the commanders’ last three items was a correct response.

“Select the one best answer” questions

Within the 36 questions in this category, the number of possible responses in each item ranged from a low of two to a high of six. These questions required an exact match with a commander’s response to be assessed as correct.

“Select the two best answers” question

Within the one question in this category, the number of possible responses in each item was six. This question also required an exact match with a commander's response (2 of 2 correct responses) to be assessed as correct.

“Select all that apply” questions

The number of possible responses ranged from a low of five to a high of nine on the eight “select all that apply” questions. Four of the eight questions had possible responses that were sufficiently distinct options that exact matches were required for the responses to be assessed as correct. The remaining four questions had possible responses with smaller marginal differences between some of the answer choices. Because these responses had minimal differences few correct responses were initially identified. For these four questions, correct responses had the commander's responses marked, but in addition had one or more additional boxes marked that were in a subset of responses that were close in nature to the commanders.

C. HUNDREDTH HOUSE ASSESSMENT SCALE CONSTRUCTION

Table C.1
Mean response assessment for – pre-and post-test scores

Variable	Mean	Fail if<10%	Variable	Mean	Fail if<10%
a1	0.74		a29	0.05	Fail
b1	0.77		b29	0.11	
a2	0.44		a30	0.06	Fail
b2	0.32		b30	0.24	
a3	0.92		a31	0.25	
b3	0.95		b31	0.20	
a4	0.36		a33	0.44	
b4	0.42		b33	0.51	
a5	0.33		a34	0.20	
b5	0.38		b34	0.31	
a6	0.41		a35	0.37	
b6	0.38		b35	0.48	
a7	0.73		a36	0.21	
b7	0.88		b36	0.21	
a8	0.32		a38	0.26	
b8	0.31		b38	0.43	
a9	0.41		a39	0.39	
b9	0.47		b39	0.30	
a10	0.13		a40	0.12	
b10	0.16		b40	0.16	
a12	0.32		a42	0.28	
b12	0.38		b42	0.32	
a13	0.60		a43	0.12	
b13	0.56		b43	0.23	
a15	0.84		a44	0.40	
b15	0.91		b44	0.48	
a16	0.47		a45	0.34	
b16	0.52		b45	0.38	
a17	0.32		a46	0.76	
b17	0.38		b46	0.81	
a19	0.25		a47	0.42	
b19	0.23		b47	0.50	
a20	0.44		a48	0.56	
b20	0.47		b48	0.76	
a22	0.32		a49	0.29	
b22	0.34		b49	0.56	
a23	0.38		a50	0.30	
b23	0.35		b50	0.67	
a24	0.20		a52	0.52	
b24	0.31		b52	0.77	
a25	0.12		a53	0.55	
b25	0.13		b53	0.69	
a26	0.47		a54	0.45	
b26	0.54		b54	0.62	
a28	0.14		a55	0.31	
b28	0.11		b55	0.23	

Cronbach's alpha – question reliability assessment

To assess question reliability for the remaining 47 questions, we used Cronbach's alpha, a coefficient of reliability designed to determine how individual test question responses are correlated with the overall test score. The equation looks like:

Figure C.1
Cronbach's Alpha Coefficient of Reliability Equation¹²⁶

$$\alpha = \frac{N * \bar{C}}{\bar{V} + (N - 1) * \bar{C}}$$

N – Number of items (test questions)

\bar{C} – Average inter-item covariance

\bar{V} – Average variance

The generally desired goal for a Cronbach's alpha score is about 70 percent. A negative sign for an item-test or item-rest correlation implies that the “wrong” people are getting a question right, and the “right” people are getting a question wrong.¹²⁷ Negative signs for item-test and item-rest correlations imply that scores on the questions are negatively correlated with the overall test including the score in question or the test without the score in question and are therefore unreliable.¹²⁸

We computed a Cronbach's alpha reliability coefficient¹²⁹ using the 47 questions that remained following the initial review of consistency/congruity between commanders.¹³⁰ The resulting Cronbach's alpha for this model was .41 as shown in Table B.2.

¹²⁶ UCLA, "What Does Cronbach's Alpha Mean?," UCLA Academic Technology Services, <http://www.ats.ucla.edu/stat/Spss/faq/alpha.html> (as of May 31, 2009).

¹²⁷ This means that respondents who have done well on most questions missed a question that respondents who have generally done poorly on most questions got right. The success rate on the questions is not correlated with the success rate of respondents on the overall test. This implies that the question is not a reliable measure of performance on the test and should not be included in the final model.

¹²⁸ This means the item-test correlation shows how highly correlated each item is with the overall scale. The item-rest correlation shows how the item is correlated with a scale computed from only the other items.

¹²⁹ We used Stata statistical package with the asis command to prevent Stata from automatically reversing item-test and item-rest negative signs under the assumption that positive or negative correlation is acceptable in a multidimensional scale. Since we are constructing a uni-dimensional scale, this automatic sign reversal would be inappropriate.

¹³⁰ The deleted questions were 11, 14, 21, 27, 32, 37, 41, and 51.

Table C.2
Cronbach's alpha: Initial 55 question model

//Cronbach's alpha calculations 1st iteration (minus 11,14,21,27,32,37,41,51) alpha b1 b2
b3 b4 b5 b6 b7 b8 b9 b10 b12 b13 b15 b16 b17 b18 b19 b20 b22 b23 b24 b25 b26 b28 b29 b30
b31 b33 b34 b35 b36 b38 b39 b40 b42 b43 b44 b45 b46 b47 b48 b49 b50 b52 b53 b54 b55, asis
i c
Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average inter-item covariance	alpha
b1	82	+	0.2572	0.1554	.00282	0.3981
b2	82	+	0.0067	-0.1131	.0032698	0.4360
b3	82	+	0.0699	0.0151	.0030495	0.4138
b4	82	+	0.0843	-0.0383	.0031328	0.4256
b5	82	+	0.1083	-0.0175	.0030952	0.4229
b6	82	+	-0.1056	-0.2208	.0034691	0.4508
b7	82	+	0.1432	0.0683	.0029847	0.4097
b8	82	+	0.2235	0.1016	.0028753	0.4046
b9	82	+	0.3503	0.2319	.0026329	0.3836
b10	82	+	0.0593	-0.0414	.0031252	0.4229
b12	82	+	0.1710	0.0459	.0029759	0.4132
b13	82	+	0.1535	0.0274	.0030103	0.4161
b15	82	+	0.1920	0.1324	.0029413	0.4053
b16	82	+	0.1854	0.0602	.0029489	0.4110
b17	82	+	0.1309	0.0105	.0030431	0.4182
b18	82	+	0.0348	-0.0129	.0030714	0.4153
b19	82	+	0.0342	-0.0748	.003186	0.4284
b20	82	+	0.4247	0.3123	.0024895	0.3703
b22	82	+	0.1607	0.0379	.0029922	0.4143
b23	82	+	0.1462	0.0282	.003012	0.4154
b24	82	+	0.2224	0.1039	.0028761	0.4043
b25	82	+	0.2582	0.1717	.0028331	0.3979
b26	82	+	-0.0895	-0.2122	.0034769	0.4521
b28	82	+	0.1075	0.0323	.0030254	0.4130
b29	82	+	0.2856	0.2033	.0028011	0.3949
b30	82	+	0.1668	0.0602	.0029655	0.4105
b31	82	+	0.2371	0.1345	.002852	0.4008
b33	82	+	0.0289	-0.0971	.0032488	0.4351
b34	82	+	0.3025	0.1910	.0027336	0.3916
b35	82	+	0.1829	0.0567	.0029547	0.4116
b36	82	+	0.3590	0.2586	.0026492	0.3833
b38	82	+	0.2944	0.1724	.0027403	0.3932
b39	82	+	0.2395	0.1239	.002845	0.4014
b40	82	+	0.1141	0.0134	.0030417	0.4162
b42	82	+	0.3900	0.2842	.0025785	0.3776
b43	82	+	0.2843	0.1816	.0027746	0.3943
b44	82	+	0.4514	0.3419	.0024392	0.3654
b45	82	+	0.1400	0.0149	.0030341	0.4179
b46	82	+	-0.0353	-0.1372	.0032779	0.4350
b47	82	+	0.2124	0.0889	.0028968	0.4065
b48	82	+	0.0904	-0.0169	.0030894	0.4206
b49	82	+	0.3354	0.2168	.0026626	0.3862
b50	82	+	0.2834	0.1709	.0027673	0.3946
b52	82	+	0.3124	0.2092	.0027263	0.3902
b53	82	+	0.3688	0.2627	.002619	0.3812
b54	82	+	0.3124	0.1953	.0027092	0.3901
b55	82	+	0.1153	0.0081	.003049	0.4174
Test scale					.0029318	0.4134

Determining the appropriate scale requires an iterative process of deleting items that will provide an increase in the alpha coefficient for the model as a whole upon deletion. During the first iteration, item b26 had large negative values for item-test and item-rest correlations and provided the largest boost in the alpha coefficient and therefore was selected for deletion.¹³¹ The model run without b26 resulted in an alpha coefficient increase to .4521 as depicted in the shaded sections of Table B.3.

Table C.3
Cronbach's alpha: 2nd Iteration

```
//Cronbach's alpha calculations 2nd iteration (minus 26) double negative item rest
& item test alpha b1 b2 b3 b4 b5 b6 b7 b8 b9 b10 b12 b13 b15 b16 b17 b18 b19 b20/*
> */ b22 b23 b24 b25 b28 b29 b30 b31 b33 b34 b35 b36 b38 b39 b40 b42 b43 b44 b45
b46 b47 b48 b49 b50 b52 b53 b54 b55, asis i c
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average inter-item covariance	alpha
b1	82	+	0.2549	0.1549	.0033776	0.4387
b2	82	+	0.0260	-0.0919	.0038144	0.4710
b3	82	+	0.0524	-0.0014	.0036362	0.4537
b4	82	+	0.1149	-0.0053	.0036453	0.4597
b5	82	+	0.1295	0.0062	.0036225	0.4585
b6	82	+	-0.0746	-0.1889	.0040045	0.4832
b7	82	+	0.1375	0.0640	.0035577	0.4494
b8	82	+	0.2328	0.1136	.0034126	0.4432
b9	82	+	0.3676	0.2528	.0031374	0.4226
b10	82	+	0.0627	-0.0362	.0036937	0.4609
b12	82	+	0.1726	0.0499	.0035352	0.4523
b13	82	+	0.1454	0.0215	.0035915	0.4564
b15	82	+	0.1797	0.1211	.0035173	0.4457
b16	82	+	0.1616	0.0383	.003558	0.4540
b17	82	+	0.1158	-0.0025	.0036398	0.4591
b18	82	+	0.0117	-0.0352	.003662	0.4552
b19	82	+	0.0387	-0.0683	.0037554	0.4659
b20	82	+	0.4106	0.2992	.0030489	0.4155
b22	82	+	0.1616	0.0412	.0035541	0.4534
b23	82	+	0.1628	0.0473	.0035458	0.4523
b24	82	+	0.2505	0.1353	.003378	0.4403
b25	82	+	0.2571	0.1722	.0033901	0.4383
b28	82	+	0.0983	0.0244	.0036055	0.4528
b29	82	+	0.2615	0.1799	.0033883	0.4380
b30	82	+	0.1794	0.0752	.0035066	0.4483
b31	82	+	0.2081	0.1066	.003457	0.4446
b33	82	+	0.0293	-0.0944	.0038284	0.4726
b34	82	+	0.2995	0.1900	.0032864	0.4330
b35	82	+	0.1916	0.0680	.0034978	0.4498
b36	82	+	0.3645	0.2664	.0031818	0.4242
b38	82	+	0.2856	0.1656	.0033053	0.4356
b39	82	+	0.2216	0.1076	.0034336	0.4442
b40	82	+	0.1241	0.0255	.0035939	0.4539
b42	82	+	0.4118	0.3099	.0030744	0.4165
b43	82	+	0.2660	0.1644	.003357	0.4374

¹³¹ See Table B.2 highlighted section for item-test, item-rest, and projected alpha scores.

b44	82	+	0.4771	0.3725	.0029138	0.4043
b45	82	+	0.1388	0.0161	.0036027	0.4570
b46	82	+	-0.0131	-0.1135	.0038248	0.4699
b47	82	+	0.2254	0.1047	.0034278	0.4445
b48	82	+	0.0945	-0.0108	.0036535	0.4587
b49	82	+	0.3332	0.2169	.0032088	0.4281
b50	82	+	0.2687	0.1578	.0033445	0.4374
b52	82	+	0.3084	0.2070	.0032806	0.4318
b53	82	+	0.3626	0.2583	.0031702	0.4239
b54	82	+	0.3151	0.2004	.003249	0.4309
b55	82	+	0.0857	-0.0196	.0036687	0.4598
Test scale					.0034769	0.4521

During the second iteration, item b6 had large negative values for item-test and item-rest correlations and provided the largest boost in the alpha coefficient and therefore was selected for deletion. The model run without item b6 resulted in an alpha coefficient increase to .5329 as depicted in the shaded sections of Table B.4.

Table C.4
Cronbach's alpha: 3rd Iteration

```
//Cronbach's alpha calculations 3rd iteration (minus 6) next largest double negative
. alpha b1 b2 b3 b4 b5 b7 b8 b9 b10 b12 b13 b15 b16 b17 b18 b19 b20/*
> */ b22 b23 b24 b25 b28 b29 b30 b31 b33 b34 b35 b36 b38 b39 b40 b42 b43 b44 b45 b46
b47 b48 b49 b50 b52 b53 b54 b55, asis i c
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average inter-item covariance	alpha
b1	87	+	0.1336	0.0373	.0050232	0.5347
b2	87	+	0.0722	-0.0381	.0051749	0.5438
b3	87	+	0.0426	-0.0063	.0050991	0.5347
b4	87	+	0.0804	-0.0324	.0051643	0.5436
b5	87	+	0.1807	0.0664	.0049455	0.5328
b7	87	+	0.2359	0.1671	.0048637	0.5241
b8	87	+	0.2845	0.1756	.0047136	0.5203
b9	87	+	0.3476	0.2390	.0045657	0.5126
b10	87	+	0.1165	0.0219	.0050527	0.5360
b12	87	+	0.2068	0.0927	.004887	0.5298
b13	87	+	0.1304	0.0149	.0050596	0.5387
b15	87	+	0.1779	0.1245	.0049616	0.5281
b16	87	+	0.2171	0.1030	.0048637	0.5287
b17	87	+	0.1207	0.0088	.0050739	0.5390
b18	87	+	0.0259	-0.0168	.005107	0.5348
b19	87	+	0.1128	0.0112	.0050709	0.5376
b20	87	+	0.4057	0.3013	.0044328	0.5051
b22	87	+	0.1544	0.0429	.0050002	0.5352
b23	87	+	0.1908	0.0838	.0049184	0.5306
b24	87	+	0.3314	0.2273	.0046145	0.5146
b25	87	+	0.2497	0.1720	.0048264	0.5229
b28	87	+	0.0591	-0.0085	.0051041	0.5362
b29	87	+	0.2274	0.1519	.0048655	0.5247
b30	87	+	0.2030	0.1045	.0048917	0.5283
b31	87	+	0.2243	0.1299	.0048518	0.5258
b33	87	+	0.0066	-0.1093	.0053436	0.5527
b34	87	+	0.3070	0.2044	.0046725	0.5175

b35	87	+	0.2019	0.0864	.0048989	0.5306
b36	87	+	0.4040	0.3153	.0044983	0.5068
b38	87	+	0.2879	0.1757	.0047022	0.5202
b39	87	+	0.2140	0.1077	.0048692	0.5280
b40	87	+	0.1828	0.0893	.0049298	0.5297
b42	87	+	0.4359	0.3411	.0043953	0.5019
b43	87	+	0.2261	0.1300	.0048473	0.5257
b44	87	+	0.4873	0.3910	.0042495	0.4942
b45	87	+	0.1490	0.0347	.005016	0.5364
b46	87	+	-0.0246	-0.1166	.0053058	0.5482
b47	87	+	0.1848	0.0702	.0049367	0.5324
b48	87	+	0.0722	-0.0310	.0051553	0.5420
b49	87	+	0.3629	0.2558	.0045322	0.5107
b50	87	+	0.3497	0.2496	.0045822	0.5125
b52	87	+	0.2870	0.1916	.0047272	0.5195
b53	87	+	0.3353	0.2354	.0046153	0.5142
b54	87	+	0.3471	0.2418	.0045746	0.5127
b55	87	+	0.1402	0.0404	.0050146	0.5346

Test scale					.0048666	0.5329

The next criteria used to select items for deletion was any item that would provide an increase in alpha to greater than .5340. This resulted in the deletion of an additional 16 items. The model run without these items increased the model alpha to .6759 as depicted in the shaded sections of Table B.5.

Table C.5
Cronbach's alpha: 4th Iteration

```
//Cronbach's alpha calculations 4th iteration (minus 1,
2,3,4,10,13,17,18,19,22,28,33,45,46,48,55) al
> l values above .5340. alpha b5 b7 b8 b9 b12 b15 b16 b20 b22/*
> */ b24 b25 b29 b30 b31 b34 b35 b36 b38 b39 b40 b42 b43 b44 b47 b49 b50 b52 b53 b54 ,
asis i c
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average inter-item covariance	alpha
b5	93	+	0.2713	0.1553	.0139374	0.6732
b7	93	+	0.2779	0.2063	.0140682	0.6693
b8	93	+	0.3582	0.2508	.0134857	0.6648
b9	93	+	0.3076	0.1920	.0137361	0.6700
b12	93	+	0.2026	0.0845	.0143094	0.6794
b15	93	+	0.3018	0.2461	.0141044	0.6685
b16	93	+	0.2652	0.1479	.013969	0.6740
b20	93	+	0.4657	0.3624	.0128661	0.6544
b22	93	+	0.2161	0.1017	.0142333	0.6776
b24	93	+	0.3492	0.2419	.0135376	0.6656
b25	93	+	0.3220	0.2462	.0138716	0.6667
b29	93	+	0.1816	0.1013	.0143892	0.6753
b30	93	+	0.2053	0.1036	.0142819	0.6764
b31	93	+	0.2272	0.1315	.0141854	0.6740
b34	93	+	0.3163	0.2121	.0137306	0.6681
b35	93	+	0.2346	0.1155	.0141369	0.6769
b36	93	+	0.4083	0.3169	.0133329	0.6600
b38	93	+	0.4229	0.3156	.0131017	0.6588

b39	93	+	0.2068	0.0981	.0142769	0.6774
b40	93	+	0.2113	0.1171	.0142575	0.6750
b42	93	+	0.4543	0.3572	.0130071	0.6557
b43	93	+	0.2271	0.1245	.0141786	0.6749
b44	93	+	0.5211	0.4243	.0125655	0.6486
b47	93	+	0.2296	0.1111	.0141641	0.6772
b49	93	+	0.3627	0.2507	.0134331	0.6647
b50	93	+	0.3831	0.2810	.0133803	0.6623
b52	93	+	0.4335	0.3425	.0131994	0.6579
b53	93	+	0.3692	0.2683	.0134662	0.6635
b54	93	+	0.3982	0.2930	.0132696	0.6611
Test scale					.0137405	0.6759

Upon review of the resulting model, b12 had the highest potential increase in the alpha coefficient so it was selected for deletion. The model run without b12 resulted in an alpha coefficient increase to .6794 as depicted in the shaded sections of Table B.6.

Table C.6
Cronbach's alpha: 5th Iteration

```
. alpha b5 b7 b8 b9 b15 b16 b20/*
> */ b22 b24 b25 b29 b30 b31 b34 b35 b36 b38 b39 b40 b42 b43 b44 b47 b49 b50 b52 b53
b54 , asis i c
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average inter-item covariance	alpha
b5	93	+	0.2864	0.1691	.0144661	0.6758
b7	93	+	0.2734	0.2004	.0147005	0.6732
b8	93	+	0.3616	0.2524	.0140555	0.6684
b9	93	+	0.3341	0.2181	.0141861	0.6714
b15	93	+	0.2805	0.2231	.0147818	0.6730
b16	93	+	0.2797	0.1610	.0145031	0.6766
b20	93	+	0.4696	0.3648	.0133969	0.6578
b22	93	+	0.2115	0.0948	.0148917	0.6820
b24	93	+	0.3389	0.2290	.0141861	0.6704
b25	93	+	0.3348	0.2583	.0144272	0.6695
b29	93	+	0.1841	0.1023	.0150155	0.6789
b30	93	+	0.1838	0.0797	.0150212	0.6819
b31	93	+	0.2297	0.1323	.0148004	0.6777
b34	93	+	0.3278	0.2224	.0142713	0.6710
b35	93	+	0.2514	0.1309	.0146669	0.6793
b36	93	+	0.4091	0.3161	.0139064	0.6637
b38	93	+	0.4218	0.3123	.0136759	0.6627
b39	93	+	0.1989	0.0880	.0149526	0.6820
b40	93	+	0.2040	0.1079	.0149216	0.6793
b42	93	+	0.4694	0.3719	.0134851	0.6580
b43	93	+	0.2089	0.1038	.0148973	0.6802
b44	93	+	0.5326	0.4353	.0130353	0.6511
b47	93	+	0.2456	0.1257	.0147005	0.6797
b49	93	+	0.3479	0.2327	.0141062	0.6701
b50	93	+	0.3850	0.2811	.0139523	0.6660
b52	93	+	0.4386	0.3464	.0137435	0.6611
b53	93	+	0.3638	0.2606	.0140815	0.6678
b54	93	+	0.4002	0.2932	.0138344	0.6647
Test scale					.0143094	0.6794

At this point, the model was getting diminishing returns to alpha for each item deletion and the model was losing items that could help explain performance increases. I decided that this model showed the best balance between the tradeoff between future gains to alpha and losses to items and therefore was selected as the final model. The final model consisted of 28 of the original 55 questions.

D. HUNDREDTH HOUSE DATA VARIABLE LIST

**Table D.1
Hundredth House Data Variable List**

Variable Code	Variable Description/Definition	Variable Possible Values
survey	Number of survey to match pre- and post-tests	pretests 1 to 140 posttests 1001 to 1040
unit	Unit respondent assigned to	0 = 4-9 INF 1=2-23 INF
session	Training session sequence	1,2,3 = 4-9 INF 4=2-23 INF
pvtpv2pfc	Number of respondents who are Privates	1 = PVT/PV2/PFC
spccpl	Number of respondents who are Specialists/Corporals	1 = SPC/CPL
sgt	Number of respondents who are Sergeants	1 = SGT
ssg	Number of respondents who are Staff Sergeants	1 = SSG
LT2nd	Number of respondents who are Second Lieutenants	1 = 2LT
LT1st	Number of respondents who are First Lieutenants	1 = 1LT
ranknco	Number of respondents who are NCOs	0 = Private/Officer 1 = SGT/SSG = NCO
rankoff	Number of respondents who are Officers	0 = Private/NCO 1 = 2LT/1LT = Officer
oef2001	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2002	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2003	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2004	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2005	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2006	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2007	Started deployment to Afghanistan in this year	1 = Deployment began this year
oef2008	Started deployment to Afghanistan in this year	1 = Deployment began this year
oif2003	Started deployment to Iraq in this year	1 = Deployment began this year
oif2004	Started deployment to Iraq in this year	1 = Deployment began this year
oif2005	Started deployment to Iraq in this year	1 = Deployment began this year
oif2006	Started deployment to Iraq in this year	1 = Deployment began this year
oif2007	Started deployment to Iraq in this year	1 = Deployment began this year
oif2008	Started deployment to Iraq in this year	1 = Deployment began this year
deprecir	Deployed recently Iraq = started deployment 2006 or later	1 = Deployed 2006-2008
depoldev	Deployed ever Afghanistan or old (deployment before 2006) to Iraq	1 = Deployed 2001-2005 Iraq/Afghanistan or 2006-2008 to Afghanistan
inter	RankNCO and depoldev (deployed ever Afgh or old to Iraq)	1 = NCO and old deployment Iraq or ever deployment Afghanistan
interrec	RankNCO and deprecir (deployed Iraq 2006-2008)	1 = NCO and recent deployment (2006 - 2008) to Iraq
depoef	Deployed to Operation Enduring Freedom (Afghanistan)	1 = Deployed to OEF ever
depoif	Deployed to Operation Iraqi Freedom (Iraq)	1 = Deployed to OIF ever
depboth	Deployed to both Iraq and Afghanistan	1 = Previous deployment to both Iraq and Afghanistan
inter2	RankNCO and deployment to OIF (Iraq) ever	1 = NCO and deployment to OIF (Iraq) ever
inter3	RankNCO and deployment to OEF (Afghanistan) ever	1 = NCO and deployment to OEF (Afghanistan) ever
a1-a55	Pretest questions #1-55	Qs 11,14,21,27,32,37,41,51 deleted initially
b1-b55	Posttest questions #1-55	Qs 11,14,21,27,32,37,41,51 deleted initially
delta_1_55	Pretest/Posttest comparison 0,0 0,1 0=wrong 1=right	0,0 = 0 points 0,1 = 1point
del_sub	Subtotal of change score method	total change score per respondent
prtot	Pretest total number questions correct by respondent	0 to 47
pst_sub	Posttest subtotal number questions correct by respondent	0 to 30
psttot	Posttest total number questions correct by respondent	0 to 47
pre_sub	Pretest subtotal number questions correct by respondent	0 to 30
del_tot	Total of change score method	0 to 47
pstpr	Posttest minus pretest total correct response score	0 to 47

E. TACTICAL VIGNETTE SURVEY RESPONDENT SURVEY

Figure E.1
TVS Respondent Survey

Survey begins on next full page

Strykernet Tactical Vignettes Survey

This survey is part of a study conducted by the Arroyo Center of the RAND Corporation in Santa Monica, California and sponsored by I Corps, Fort Lewis, Washington. The goal of the study is to assist the Army to better understand how the Stryker Warfighters' Forum (SWF) is helping to sustain and improve individual and Stryker unit skills capabilities and combat readiness. You have been asked to complete this survey because you recently completed a deployment with a Stryker unit.

Participation in this survey is completely voluntary. You may choose not to fill it out or to skip any question or portion you would prefer not to answer. You will not be required to provide any information about your identity. The estimated time to complete the survey is about 1 hour.

Your answers will go to the research team at the RAND Corporation, and they will be anonymous. No one will be able to identify them as having come from you. RAND will not provide information to the Army about who participated in the survey, but may inform it of what percent of individuals responded from different units. In reporting results of the survey, RAND will combine your responses with those of others in a way that would prevent anyone from deducing what individuals responded.

If you choose to contact our team and provide your contact information, RAND will keep this information confidential and maintain it only as long as necessary to determine whether follow-up is needed. After successful follow-up or at the conclusion of the study (whichever comes first), all contact information will be destroyed.

We urge you to complete this survey. Your participation is very important to the study team's efforts to help units in preparing for the next deployment and to get as complete a picture as possible of the SWF's contribution to skills capabilities and combat readiness.

If you have any questions about the study or your participation, you may contact RAND's project leader, Bryan Hallmark (310) 393-0411, ext. 8312 hallmark@rand.org or assistant leader Jamie Gayton (310) 393-0411 ext. 7838 jgayton@rand.org.

If you have any questions about your rights as a research participant, you may contact

**Jim Tebow, Co-Administrator
RAND Human Subjects Protection Committee
1778 Main Street MSW
Santa Monica, CA 90407-2139
(310) 393-0411 x7173
James_Tebow@rand.org**

Tactical Vignettes Survey

Purpose and Administrative notes

Soldiers and leaders deploying to Iraq enter theater with a baseline of training and knowledge that can help them respond to events that commonly occur in theater. By the time a unit completes an extended deployment in theater, they often refine or improve "battle drills" or "plays" that are routinely executed. This survey is designed to have commanders, leaders, and staff members who have recently returned from operations in Iraq share what they learned and how they conducted operations so that future deploying units can also benefit from those lessons. Answer these surveys for the position that you had the most experience in while serving in Iraq.

We would like you to answer a total of FOUR scenarios. The first two scenarios (marked "**MUST COMPLETE**" on the sides of the page) should be completed. You may then choose which TWO of the other four scenarios you provide answers for (marked "**CHOOSE TWO OUT OF FOUR**" on the sides).

For each of the four scenarios, please provide a complete list of the actions, coordination, preparations, tools, or "other" items that you felt were necessary to most effectively respond to the given situation (maximizing the likelihood of mission success while mitigating the risk to subordinates).

Your responses will be aggregated with those of other leaders within your grade/rank. Our research efforts will focus on tallying the frequency (# of times specific items are mentioned) and the quality of responses (# of items mentioned that are deemed critical for success). As such, we request that you be as thorough as possible (include all necessary items), while maintaining clarity and conciseness (bulletized lists are desired). You may include items in some or all of the categories (i.e., the "boxed" items); there is NO requirement to enter items into every category.

One final note: We realize that there are many possible branches and sequels associated with each of the events/scenarios. Please provide responses in a straight forward manner that address the baseline scenario as you have routinely seen it played out. By listing these "battle-sharpened" responses, you will allow the survey team to better understand the extent of learning that took place while in theater.

1) Please mark the box(es) indicating the positions you held during your most recent deployment in Iraq (please mark all that apply) Please also indicate the number of months you served in each of these positions.

	# months served
<input type="checkbox"/> Member of squad	_____
<input type="checkbox"/> Team leader	_____
<input type="checkbox"/> Squad leader	_____
<input type="checkbox"/> Platoon Sergeant	_____
<input type="checkbox"/> Company staff NCO	_____
<input type="checkbox"/> Battalion/Brigade Battle staff NCO	_____
<input type="checkbox"/> Platoon Leader	_____
<input type="checkbox"/> Company Executive Officer	_____
<input type="checkbox"/> Company Commander	_____
<input type="checkbox"/> Battalion/Squadron Commander	_____
<input type="checkbox"/> Battalion S3/XO	_____
<input type="checkbox"/> Primary Staff Officer (company grade) (S1, S2, S4, S6, S8)	_____
<input type="checkbox"/> Assistant Staff Officer (company grade) (asst S3, Asst S1, etc.)	_____
<input type="checkbox"/> Gunner (turret in vehicle)	_____
<input type="checkbox"/> Driver	_____
<input type="checkbox"/> Vehicle commander	_____
<input type="checkbox"/> Other _____	_____

2) What is your branch/MOS

- Infantry/11
- Field Artillery/13
- Air Defense/14
- Armor/19
- Engineer/21
- Signal Corps/26
- Military Police/31
- Military Intelligence/35/9897/98
- Adjutant General/42
- Ordnance/maintenance/44/45/52/83/91
- Chemical/74
- Transportation/88
- Quartermaster/92
- Other (Please List) _____

Tactical Vignettes Survey #1

IED (suspected) identified by patrol

Your unipersonal security detachment is on a three vehicle patrol within your area of operations. You are located in a semi-urban area with a mosque and market in close proximity with many local Iraqis walking around. Your lead vehicle identifies and reports a suspicious looking broken off section of a roadside curb that appears to be out of place - slightly discolored and almost propped at an angle facing the road. If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparations/battle drills/SOPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tools: (a.g. "stay back 60 meters" signs for vehicles, improved filters for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

Respond as QRF to a "hot" area

Tactical Vignettes Survey #2

You are the leader of a four Stryker combat vehicle QRF supporting your JSS/COP/FOB. Your team receives an order to respond to a report of an explosion and gun fire about a half mile from your compound. In the three sentence situation brief, you are also told that there was a United States Army Corps of Engineers team with a civilian contracted security force that had coordinated to pass through the unit's area that day however, there had been no contact with the element up to this point. As you arrive on the scene, you see a smoking/damaged black SUV and two small overturned Iraqi sedans that all appear to have casualties. You also note that there are no Iraqi police on site. You hear the cracks of continued AK47 fire that is coming from the direction of a 3 story building or adjacent alleyway. There is sporadic unidentified gunfire coming from beyond the damaged SUV. Please describe your list of items from the time you are notified until you have stabilized the scene.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparations/battle drills/SOPs: that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved litter for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

Tactical Vignettes Survey #3

Dismounted Patrol takes an impersonal snuff fire

Your unit/personal security detachment is on a dismounted patrol within your area of operations. Your three Strykers are following a short distance behind. You are patrolling in a semi-urban area with a Mosque and an elementary school in close proximity. You notice a long winding line of trucks across the street that appear to be waiting in line for kerosene to be distributed. You hear the crack of two shots being fired and see one of your Soldiers go down. You are not sure if he is shot, or if he is reacting to the fire. You are the leader of the patrol. If you run out of room completing your answer, please use the back of this sheet.

COMPLETE 2 of 4
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COMPLETE 2 of 4
 COMPLETE 2 of 4

	Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
	Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
	Prior preparations/battle drills/SOPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
	Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved litters for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
	Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

Tactical Vignettes Survey #4

RDE engagement (escalation of force) of POV with S&F

Your unit/personal security detachment (PSD) is on a three vehicle patrol within your area of operations. You are located in a semi-urban area with paved neighborhood streets opening onto an MBR with 2 lanes of traffic flowing in each direction with a median in the center. Your PSD is moving in the center of the two lanes. You are the leader and located in the second vehicle. You hear the sound of two shots being fired followed by a short pause and then an additional two shots that all sounded distinctly like rounds from an M4. On the radio you hear the trail vehicle commander state that they just engaged a vehicle when it tried to enter the highway at high speed from an entrance ramp along your right hand side – failing to adhere to distance requirements. Please start your list of items from before your trail gunner engaged and end it after the event is fully resolved.

COMPLETED 2 of 4

COMPLETED 2 of 4

Actions (or key decisions) required by you or your unit

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Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel

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Prior preparations/battle drills/SOPs that your unit would need to employ

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Use of provided or developed tools: (e.g. "stay back 60 meters" signs for vehicles, improved filters for HMMWV mounting)

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Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories

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COMPLETED 2 of 4

COMPLETED 2 of 4

Tactical Vignettes Survey #5

Conduct Hasty/Deliberate Check Point

Your unit/personal security detachment is on a four vehicle patrol within your area of operations. You are located in a semi-urban area with the Diyala River to your east that joins the Tigris River to your south. There is one main bridge to move from the south and east into the Baghdad city limits. You have been tasked by your higher to establish a hasty checkpoint operation to search for weapons or explosives being transported into your area of operations along this route. You are the leader of the patrol. If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparation/battle drills/SOPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved filters for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

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Tactical Vignettes Survey #6

Indirect Fire on Prison/Compound/Installation JSS/COP/FOB

Your unit is located on a JSS/COP/FOB. You established an internal aid station with a small contingent of medics and one PA. Your area has been relatively calm, resulting in a reduction in force protection posture to carrying weapons and wearing soft caps inside the compound. While walking to the mess hall, you hear the distinct whistle of an incoming round and hear an explosion on the other side of your compound. You are the senior leader on the JSS/COP/FOB. If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparation/available drills/OPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved filters for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not fit into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

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Tactical Vignettes Survey #7

Conduct Cordon and Search

You are a leader of a unit in a Stryker Battalion in a semi-urban area. You receive the mission from your commander to conduct a cordon and search of a one block area within your habitual patrol area. This is an area that you are very familiar with because you attend the local NAC meetings there on a weekly basis. You are also told that informants have stated that there are weapons, ammunition, and EFP materials in one of the houses. Please list the items from receipt of mission to completion of mission that describe how you would address this scenario including how you would protect the identity of the informant(s). If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparation: available drills/SOPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved barriers for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

Tactical Vignettes Survey #8

Conduct a Raid in coordination with the Iraqi Army

You are a leader of a unit in a Stryker Battalion in a semi-urban area. You receive the mission from your commander to conduct a joint raid of two suspected IED/BIED manufacturing and storage facilities located within a one half mile radius of each other. The raid is to be conducted at night to maximize the likelihood that the persons of interest will be present. You are very comfortable with the area (as you have patrolled it many times), but you have never worked a mission with this particular IA unit before. You are told that the informant will travel with you to identify the house but will not leave your vehicle for fear of being identified. If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparation and/or drills/OPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tactics (e.g. "stay back 50 meters" signs for vehicles, improved IEDs for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not "fit" into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

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Tactical Vignettes Survey #9

Secure a meeting site for a habitual Iraqi DAC (District Advisory Council) meeting

You are the leader of a four Stryker combat vehicle personal security detachment in a semi-urban area. Your team receives an order to secure a meeting site for a habitual District Advisory Council Meeting to be held in three days. The meeting attendees will include the Iraqi neighborhood council leaders, district council leaders, and a representative from the Provincial Council. The battalion commander and Corps of Engineers representative will also likely attend. Please describe items from meeting notification through meeting completion. If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit

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Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel

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Prior preparation/mutable drills/OPs that your unit would need to employ

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Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved barriers for HMMWV mounting)

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Other critical items: other items that you feel are critical to resolving the event but do not fit into any of the previous categories

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Tactical Vignettes Survey #10

Conduct Consequence Management Operations

You are the leader of a four Stryker combat vehicle personal security detachment who has been tasked to serve as a consequence management response team for the brigade. You are located on the brigade headquarters' FOB, co-located with all typical brigade attachments. Your team receives an order to respond to the site of a VBIED attack that took place 4 hours earlier in the parking lot of a restaurant that was a local IP hangout. There were 10 killed, 25 injured, and extensive damage to the restaurant and surrounding homes, vehicles, and businesses. If you run out of room completing your answer, please use the back of this sheet.

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Actions (or key decisions) required by you or your unit 1. 2. 3. 4. 5. 6. 7. 8.
Coordination, communications, & reports: within your unit, to higher or adjacent units, or to host nation civilian, military, or government personnel 1. 2. 3. 4. 5. 6. 7. 8.
Prior preparation/available drills/OPs that your unit would need to employ 1. 2. 3. 4. 5. 6. 7. 8.
Use of provided or developed tools: (e.g. "stay back 50 meters" signs for vehicles, improved barriers for HMMWV mounting) 1. 2. 3. 4. 5. 6. 7. 8.
Other critical items: other items that you feel are critical to resolving the event but do not fit into any of the previous categories 1. 2. 3. 4. 5. 6. 7. 8.

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F. TACTICAL VIGNETTE SURVEY CODEBOOK

Table F.1
Tactical Vignette Survey Codebook: [A] Actions or Key Decisions Required

Bin 1	
Prepare to Respond (leave FOB) (PCC/PCI) Own unit actions	A1
Move to vehicles	1
Establish Redcon 1	2
Get Soldiers to Redcon 1	2
Get vehicles and squads ready	2
Get sitrep on Engineer team (call sign, veh type, personnel count)	3
Get sitrep from higher	3
Brief soldiers on friendly forces in area	3
Receive order to move	4
Alert Soldiers of situation	6
Brief soldiers on what you know	6
Issue warning order	6
Assign jobs to teams (security, aid, litter, breach, clear)	8
ID teams (aid, litter, security, etc)	6
Establish search teams	8
Conduct map recon	7
ID need for additional recovery team	8
Confirm back up QRF ready (alerted)	9
Track communications	10
Attend update brief	11
Keep medic available	12
Issue operations order	13
Detailed OPORD	13
Issue Frago to unit	13
Establish/reinforce bunkers	14
Reinforce bunkers/build inns	14
Alarms established for incoming alert	16
Review/establish EOF measures	18
Conduct ROCK drills	17
Ensure units have techlights or flashlights	18
Conduct PCC/PCI	19
Evaluate best time to conduct RAID	20
Have interpreter	21
Have Psyops personnel	22
Notify meeting participants	23
Coordinate "pass by" recon	24
Include special elements - snipers	25
coordinate snipers	26
Plan operation	28
Get grid for area/location	27
Coordinate with land owning unit	28
Ensure body bags available	29

Bin 2	
Prepare to Respond (leave FOB) (Intel actions)	A2
Request intel	30
Get intel on engineer operations	30
Request info from ground elements	30
Request intel (what where why)	30
Gather info/intel	30
Use UAV to scan area	31
Have BOLO List	32

Bin 3		Bin 4	
Prepare to Respond (leave FOB) (PCC/PCI) Coordination with ISF	A3	Conduct movement to incident site	A4
Rehearsals with IA	33	Leave FOB	37
OPORD with IA	34	Roll out gate	37
Conduct recon with informant to ID target	35	Move to site	38
Have informant ID target on map	36	Move to reported site	38
		Move to location	38
		Convoy to site	38
		Move to impact location	38
		Go to site	38
		infil	38

Bin 5		Bin 6		Bin 7	
Stop/Halt movement and seek protection	A5	ID location of "Incident"	A6	ID location of "Incident"	A7
Do not Move toward IED	39	use RWS to examine IED	48	Mark IED	52
Stop or pull off route/MSR	40	Use IR to examine IED	48	Set up cones	53
Stop back up X meters	41	get "glass" on object & confirm	48	Set up signs	54
Create standoff	41	Get grid incident (PIED or other)	49		
Take cover	42	Use RWs to scan windows & rooftops	50		
Seek cover	42	Figure out where [incoming round] hit	51		
Tail gunners signal to stop (laser at night)	43				
Do not move until rounds [incoming] cease	44				
ensure no more rounds [before moving]	44				
Get in mortar barrier	45				
Get Soldiers to secure area	45				
Take cover in bunker	45				
Get to a safe area	45				
Get everyone inside	46				
Move to interior rooms	46				
Order all soldiers into full kit	47				
Bring up uniform posture	47				

Bin 8		Bin 9	
ID checkpoint site	A8	Build Check point	A9
Select suitable site	55	Establish with cones	53
bend in road before bridge [surprise]	56	Put out warning signs	54
After bridge so cannot turn around	57	Secure both ends of bridge	60
150 meters from bridge on both ends	58	Set up on both ends of bridge	60
ID escape routes	59	Create blocking barricades	61
		Create fighting positions	62
		Contract corps of Engineers for barrier emplacement	63
		Set up concertina wire	64
		Establish with wire	64

Bin 10		Bin 11		Bin 12	
Establish security	A10	Conduct Check Point operations	A11	ID hostile actors	A1 2
Set QRFs in case of attack	9	Search cars	70	ID who is shooting	79
Put vehicles in overwatch and road block	65	Search people	71	PID known contact	79
Scout weapon team in support	66	Check IDs	72	PID Threats	79
Mounted security	67	Search for weapons or explosives	73	Identify contact	79
Mounted security with Mk19 or .50 cal	67	Put out force protection	74	Check BOLO (be on lookout) list	80
Squad for backup	68	Stop random vehicles	75		
Dismounted security	69	Contact AWTs	76		
		Establish search area	77		
		Establish detainee area	78		

Bin 13	
ID type of contact, location of impact, source of fire and actions	A13
Determine source of gunfire [location]	81
ID where fire coming from	81
Try to get grid point of origin for incoming round	81
ID enemy location	82
Analyze situation	83
Assess situation	83
Use RWS to collect intel	84
ID direction of fire	85
ID distance from gunfire	85
3D's (distance, direction, description)	85
Determine 5 Ws	85
ID if direct fire at my element	86
SITREP from element on what was being shot at	86
See if anyone has eyes or ears on	87
ID what was fired [incoming round]	88
Check for radar acquisition	89

Bin 14	
Engage, suppress, maneuver, to neutralize enemy	A14
Deploy QRF	9
5 Ss (shout, show, shove, shoot warn, shoot kill)	16
Conduct EOF guidelines from COC	16
show weapon	16
Warning shot	16
Disabling shot	16
Kill shot	16
Prepare counter battery fires	89
Engage	90
Return fire towards known/likely/suspected positions	90
Engage enemy contact	90
Return fire to 3-story bldg	90
Push strykers to initiate contact on building	90
Return fire /fight	90
Reduce threat	91
Neutralize threats	91
Eliminate threat	91
Eliminate threat	91
Clear 3-story building	92
Clear	92
Enter & clear building	92
Clear all other enemy	93
Suppress enemy	94
Suppress enemy fire	94
PLT Attack	95
Destroy	96
Destroy enemy	96
Deploy smoke	97
Pop smoke	97
Close distance	98
maneuver on enemy	98
Orient and maneuver to secure area	98
Close with	98
Maneuver on sniper	98
React to contact	99
React to enemy	99
Battle Drill 2 [react to contact]	99
Flank around opposing force behind SUV	100
Suppress enemy fire	101
Take squads to move toward contact	102
Move toward gun fire	102
Use force necessary to investigate gun fire	102
Maneuver Strykers to facilitate Casevac, support, exfil, assault	103
Maneuver vehicle to block positions [to protect	103

dismounts/casualty]	
Take building and establish "strong point"	104
Waive down [stop potential hostile to make stop]	105
Increase security	106
Have FOB/COP/JSS on amber status [increase security posture]	107
Conduct raid (at a later date)	108
Conduct raid with alternate means of entry	108
Conduct simultaneous RAID	108
RAID to clear target area	108
Stay alert - guys on roof	109
Sweep through and clear area	110
Split U.S. sections within IA units for RAID	111
Establish Sniper team support	112
Actions on objective	113

Bin 15	
	A1
ID, evaluate, treat, protect, and evacuate casualties	5
Throw smoke to conceal recovery operation	97
Treat casualties	119
Give immediate aid to casualties	119
Render 1st aid	119
Help wounded	119
Treat US casualties	119
Assist casualties	119
Render buddy aid/first aid	119
Allow no further damage to [protect] Engineer casualties	120
Allow no further damage [protect] to civ contractor casualties	120
When site secure, secure casualties	120
Secure casualties	120
Shield casualties from attacks	120
Move/secure casualty	120
Determine level of injury	121
Determine priority for MEDEVAC	121
Assess casualties	121
Triage	121
ID priority medevac	121
ID what is wrong with Soldier (if Soldiers is shot)	121
Call to Soldier for reaction	121
Inspect troops for injuries	121
Begin casevac	122
Transport casualty to CASH [combat support hospital]	122
Convoy casualties out of danger/to FOB	122
Move casualty to [high level of medical care] (CSH or aid station)	122
Call for/conduct MEDEVAC	122
Exfil wounded & KIAs	123
ID American casualties	124
Treat Local national casualties	125
Load casualties	126
Secure a CCP [casualty collection point]	127
Establish triage [point]	127
Construct a CZ [casualty zone]	127

Bin 16		Bin 17	
Conduct Sensitive site exploitation & evidence collection	A16	Process captured/Killed enemy	A17
Begin SSE	128	Process captured/Killed enemy	139
Conduct SSE	128		
Conduct investigation	129		
Collect up documents	130		
Search area of enemy location	131		
Take picture	132		
Take photos	132		
Search car	133		
Search Passengers	134		
Detain individuals	135		
Investigate impact site after rounds stop	136		
Conduct crater analysis	137		
Collect witness statements	138		

Bin 18		Bin 19	
Meeting security protocol	A18	Call/Make report/inform to friendly vehicles & Higher HQ	A19
Employ concertina wire	64	Call/Report Company/BN/BDE TOC [higher]	148
Sit down	140	Contact unit	148
Be respectful	141	Send sitreps and location as necessary	148
Search all LN entrants	142	Report checkpoint [TCP] establishment	148
Use non-lethal shot from shells	143	Sound alarm at TOC	148
Take over adjacent buildings	144	Radio other vehicles with sitrep (PIED, sniper, etc.)	149
	145	Alert convoy of situation	149
	146	Alert lead vehicle	149
	147	Report fire to other squads	149
		Report to PL or PSG	149
		Report sitrep to nearby units	149
		Report checkpoint location to other units	149
		Relay plan to all involved	149
		Report or battle handover to battlespace owner	150
		Conduct link up on ground	151
		Send a BDA [battle damage assessment]	152
		Establish accountability of personnel	153
		Get a hold of everyone to check in with squad leaders	153
		Report accountability [higher]	154
		Scream incoming	155
		Report damages/injuries/sitrep	156
		Brief squad leader of plan	157

Bin 20	
Call/make request with friendly vehicles & Higher HQ	A2 0
Call for QRF	9
Call/coordinate UAV support	31
Get UAV over building	31
Request air support to scan rooftops	31
Request attack helicopters	76
Call TOC for sitrep on unit	158
Call for further (medical) support	159
Call for backup if needed	160
Call for additional support as needed	160
Call Army Corps [of Engineers] frequency on Singgars	161
Request resources to conduct recovery operations	162
Call for wrecker support	162
Contact CRT for wrecker	162
Request CAS	163
Request ISR [intelligence, surveillance, reconnaissance]	164
Request sitrep from vehicles	165
Receive report from subordinate units	165
Reinforce all guards to be vigilant for additional [incoming] attacks	166
Coordinate/collect all medics/CLS/EMT available	167
Call guards receive intel report on incident	168
MiTT level of involvement	169

Bin 21		Bin 22		Bin 23	
Call/Coordinate IA/IP HN emergency services support	A2 1	Bypass	A2 2	Update FBCB2	A23
Call/Coordinate IA/IP support	170	Mark	182	Add icon to FBCB2	185
Coordinate with IA leader/commander	171	Move	183	Populate FBCB2	185
Link up IA and unit	172	Detour around Continue PSD	183		
Plan night coordination - no nods available	173	movement	184		
Establish# Night vision IA has	173				
When inform IA of mission [to prevent compromise]	174				
Provide scheme of operation but not location	174				
Determine Iraqi assets available (soldiers/equipment)	175				
Establish rally point	176				
Translators available	177				
Interpreter travels with informant & IA	177				
Establish movement & withdrawal plan	178				
Establish triggers for events/actions	179				
Call LN ambulance support	180				
Brief ISF	181				

Bin 24		Bin 25	
Secure the surrounding area	A24	Search area for ambush, trigger, other IED wpns, ammo)	A25
Establish QRF	9	Search for trigger point(s)/houses	201
Block the road/routes	186	Look for [initiation] wire	201
Stop traffic	186	Watch for ambush	202
block foot & vehicular traffic	186	Expect ambush	202
Set up perimeter	187	Don't commit - probably baited ambush	202
Set perimeter	187	Expect baited ambush	202
Take up positions	187	Check for IEDs	203
Use evhicles to establish perimeter	187	look for secondary IEDs	203
Isolate with vehicles	187	Scan for secondary munitions	203
Set teams all around	187	Conduct 5/25	204
Cordon area	188	Feet/5/25	204
Cordon off area with wire	188	do 30/60 meters	204
Cordon with cones & wire	188	Conduct 5 around your victors [vehicles]	204
Check surroundings	189	Search or clear house carefully [for weapons/ammo]	205
establish/provide 360 security	190	Search houses including informants	205
Keep local populace away	191	Confiscate contraband	206
alert/clear locals	191	IA will be main effort in joint search/raid	207
maneuver to secure all routes	192	Use IA to search/clear	208
Secure Mosque	193		
Secure market	193		
secure/check on school	193		
Establish high ground	194		
Secure site through dominant terrain	194		
secure site	195		
Secure scene	195		
secure/clear immediate area	195		
Secure intersections	195		
Secure area	195		
Secure [damaged] vehicle	196		
Provide overwatch with personnel	197		
Weapons (wpns) squad provde overwatch	197		
Collapse cordon	198		
Clear surrounding building	199		
provide sniper coverage on roof tops	200		

Bin 26		Bin 27	
Maintain vehicle overwatch/security	A26	Alert Locals	A27
Set up overwatch	65	Keep local populace away	191
establish trigger lines	209	Alert/clear locals	191
Conduct survivability moves	210	Get civilians to safety	191
Assign sectors of fire	211	Alert establishments	216
Find covered position for vehicles	212	Alert Mosque	216
Establish vehicle positions	212	Keep the children in school yard	217
establish nonstandard vehicle formation	213		
Establish truck 360 degree security	214		
establish support by fire	215		

Bin 28		Bin 29		Bin 30	
Question locals (attack info)	A28	Use Locals as informants	A29	Call IED support	A30
Watch for dispersion	218	Treat informant like detainee	225	Call for Buffalo	236
Gather info/intel	219	Drive away with informant	226	Call engineer support	236
Engage locals for intel	219	Provide informant mask	227		
Question locals	219	"cover" informant	228		
Talk to individuals	219	Provide informant security	228		
Collect personnel that are alive	220	No special attention	229		
Detain males	221	Have locals take there and confirm	230		
Arrest	221	Travels with IA unit	231		
Move suspects to questioning location	222	Travels in IA vehicles	231		
White lights on face for ID by informant	223	Post in air guard hatch	232		
Use interpreter to question LNs	224	Plan how to conceal informant	233		
		Source prepared to ID location/person	234		
		Information on informant	235		

Bin 31		Bin 32		Bin 33	
Call EOD	A31	Neutralize IED	A32	Assess/clean up damage	A33
Call EOD	237	Link up with EOD	238	Assess Damage	240
		Lead EOD to IED	238	Conduct BDA on car	240
		Secure EOD	239	Assess vehicle [damaged civilian one]	240
				Inspect equipment for damage	240
				Assess damage to structures	240
				Clean up mess	241
				Recover vehicles and equipment	241
				Conduct recovery ops	241
				Coordinate recovery vehicles/equipment	242
				Use wreckers to secure equipment/vehicles	242
				Issue claim card	243

Bin 34		Bin 35	
Continue Mission	A34	Post mission/event items	A35
Continue Mission	244	AAR later	249
Go home	245	Investigate proper EOF procedures	250
		Change uniform policy to "kit" [full force protection gear]	251
RTN to FOB	245		
RTB for refit	246		
Await further orders	247		
Leave area when told	247		
Load vehicle & depart	248		
Use terp to leave area	248		
Exfil[trate] leave area	248		

Table F.2
Tactical Vignette Survey Codebook: [C] Coordination, Communication, and Reports

Bin 1		Bin 2	
Before departing requirements	C1	Before departing request Intel	C2
Coordinate additional interpreters	29	Review engineer IED sweep schedule	37
Convoy request	34	review alternate routes	38
Commo checks	35	Request enemy TTPs in area	39
Ensure Comms between IA and CF	35	Typical CF reactions	40
Review mission	36	Sitrep of recent activity in area	41
		Review intel reports	42

Bin 3		Bin 4	
Report departure stats to TOC	C3	Call REQUEST from Higher (CO/BN/BDE) or battlespace owner	C4
Report personnel	42	Request QRF	1
Number of Pax	42	Request UAV	3
Report weapons	43	Coordinate UAV	3
Report equipment	44	Determine if fire finder radar picked up acquisitions	8
Number of vehicles	44	Medevac coordination	12
Report SP to company	45	Call for more assistance [backup]	16
Moving to gate	45	Call for another platoon to assist	16
		Coordinate with ISE/MiTT to recover Iraqi sedans	17
		Coordinate for recovery assets	17
		Request support to remove vehicles [wrecker/recovery]	17
		Request wrecker	17
		Request CAS	18
		Call in air strike	18
		Air weapon teams (AWT) request	18
		Request attack aviation/CAS	18
		AWT on standby	18
		Request air support	18
		Get BN to contact local police	19
		Get BN to contact local ambulance	22
		Call engineer support	30
		Call higher and request local unit support medevac	46
		Call higher and request local unit support hostiles engagement	47
		Request Iraqi fire and rescue	48
		Coordinate for air assets	49
		Send up spot report about 2 sedans	50
		Get description of civilian contract force	51
		Maintain contact with birds [aircraft] for sitrep	52
		Call MEV [Stryker medical evacuation vehicle]	53
		Call for SWT and establish radio coordination??	54
		Call for information on Contractors	55
		Conduct patrol debrief	56
		First aid [request]	57
		Request Artillery support	58
		Coordinate counterfire	58
		Deconflict action area [no one else in area]	59

Bin 5		Bin 6	
Call Report to Higher (CO/BN/BDE) or battlespace owner	C5	Plot (P)IED or location of interest	C6
Coordinate with CSH (combat support hospital)	59	Plot (P)IED on FBCB2	23
Request QRF	1	Mark on FBCB2	23
Report sitrep	13	Plot grid for building [shots fired]	70
Call JSS	13	Plot the unit	70
Send contact report higher every 5-10 minutes	13	Mark area on RWS	71
Advise/report higher on scene	13	Signal to let know where you are at	72
Advise/report higher on contact	13		
Update higher as required	13		
Send up spot report about 2 sedans	13		
Report to xray	13		
Report contact - grid, BDA, description	13		
Report Sniper fire	13		
Report 3Ds (distance, direction, description)	13		
Call in PSAF to higher	13		
Report casualty	13		
Report contact - react to contact	13		
Notify higher of danger area	13		
Advise company fired warning shots	13		
Report ROE incident	13		
Report EOF incident	13		
Report suspicious or threatening contraband	13		
Report grid of CP	13		
Call in rounds and explosions to everywhere	13		
Report 100% [accountability]	13		
Report indirect fire	13		
Report casualties	13		
Report damage	13		
Report # rounds fired	13		
Report status on search	13		
Report grid/location search and description for items found	13		
Report names of detainees	13		
Call higher of ground element	13		
Call in 9-line UXO	60		
Call in 9-line IED report	60		
Call 9-line medevac	61		
Advise/report higher on casualties	62		
Advise higher on Iraqi support (military)	63		
Air weapon teams request	64		
Alert all on FOB to take cover	65		
Alert higher medical care of incoming casualties	66		
Request air support	67		
Request wrecker	68		
Coordinate with CSH (combat support hospital)	69		

Bin 7		Bin 8	
Coordinated Actions	C7	Call Higher for EOD or straight to EOD	C8
Organize team [QRF] to take out threat	1	IED report to EOD	13
QRF	1	Call EOD	31
Have ravens [UAVs] reporting	3	Coordinate with EOD	32
Try to confirm sniper position	7	Escort EOD back to FOB	32
Destroy enemy	9	EOD presence on patrol	78
Maneuver vehicles	10	EOD on call	78
Close with enemy	10		
Confirm whether soldiers injured or not	11		
Coordinate necessary movements	71		
Gunners maintain direct communication with search party	72		
Searchers leave lane of fire for overwatch vehicle	73		
Perform counterfire [incoming rounds]	74		
Conduct counterfire mission	74		
Change rules - have everyone get into bunker	75		
Have THT [tactical HUMINT Team] interrogate	76		
Conduct meeting - let them talk	77		

Bin 9		Bin 10		Bin 11	
Call IED support	C9	Call up (P)IED location	C10	Coordinate/develop security plan	C11
Notify support elements	14	Call up grid	4	ID Stryker security overwatch locations	5
Call for Buffalo	30			AWT coordination for overwatch	6

Bin 12	
Coordinate with other units/vehicles	C12
QRF coordination	1
Maintain contact with QRF	1
Ensure comms between ground and vehicles	2
Ensure comms between vehicles and higher	2
AWT on standby	6
Possible Q36/Q37 radar acquisitions	8
Report danger in area	13
Call & update PL	13
Notify support elements	14
Call & update squads	14
Report to nearby units	14
Coordinate with other vehicles/units	14
Sitrep to squad on what unfolded	14
Get up from subordinates and report higher	15
Establish communication with engineers	30
Use FM verbal & visual to help [engineers] locate you	30
Coordinate with ground element	79
Guide birds [aircraft] to targets if needed	80
See if other vehicles were contractors	81
ID friendlies on the ground	82
Establish (have) comms with dismount team	83
Coordinate with squads to search for threat	84
Call trucks for security/cover	85
Report vehicles too close to convoy	86
Report # personnel in vehicles too close to convoy	87
Establish CP location	88
Prepare units for attack	89
Go to red status	90
Send recon platoon	91
Involve MiTT	92
Coordinate with MiTT	92
Coordinate for Civil Affairs support	93

Bin 13	
Coordinate with HN security and emergency response	C13
Call/coordinate IA or IP support	19
Coordinate for local law enforcement	19
Call and link with Iraqi Army	19
Link with IP	19
IP/IA reinforcement	19
Higher send IP/IA to assist in area	19
Link with IA hours before operation (hit time)	19
Make contact with IP commander	20
Link up with IA leader/unit	20
Provide IA/IP minimal specifics if loyalties in question	21
Brief IA late to avoid target compromise (giving away target)	21
Provide IA mission outline with no names/addresses	21
Coordinate for civilian ambulance	22
Conduct joint movement to contact	27
Tell them [IA/IP] to back off	94
Transfer overwatch to IA/IP	95
Let IA/IP do it [conduct operation] themselves	95
Task Iraqi team in direction of shots	95
Brief IA not to touch evidence	95
IA establish foothold /initial breach	95
IA conduct search	95
IA take prisoners to holding cell	95
Coordinate with IP to search vehicle	96
Intermix IA and CF forces	97
Designate IA squads to work with US squads	97
Mark IA Soldiers for nighttime operations	98
Verify any English language capabilities within IA counterpart	99
Provide IA/IP sitrep	100
Notify ISF of movement to scene	101

Bin 14		Bin 15	
Coordinate with local nationals	C14	Nothing until ID'd as Threat	C15
Tell LNs to move back	25	Verify gunshots not friendly	7
May not enter or leave cordon to ID AIF [anti iraqi forces]	25	Nothing until ID'd as Threat	103
Communicate with locals about insurgent activity in area	28		
Use interpreters	28		
use terps to engage civilians	29		
Communicate with driver [of vehicle with EOF]	29		
	102		

Bin 16		Bin 17	
Secure area	C16	Mission close out	C17
Cordon the vicinity	24	Photos to higher	13
Secure area	26	Written statements to higher	13
		Complete EOF report	33

Table F.3
Tactical Vignette Survey Codebook: [P] Prior Preparations, Battle Drills, SOPs

Bin 1	
Conduct PCC/PCIs	P1
Search team designated	1
Brief on duties assigned	1
Personnel assignments (vehicles/jobs)	1
Assign jobs (security, search, etc.)	1
Conduct rock drills	4
All equip ready/operational	5
Commo checks	5
Individual equipment available (eye pro, gloves, IBA, knee pads, wpns etc.)	5
Trucks ready	5
PCC PCIs on troops	5
Personnel are up on food water ammo	5
Weapon function checks	5
Force pro[tection] gear	5
Enforce uniform standards	5
PCC PCIs on equipment	5
Lasers boresighted	5
Nods work	5
Conduct recon	7
Rehearsal with IA	8
Plot route FBCB2	42
Get snipers	48
Brief on ROE	65
Ramp brief	65
Zero/qual [weapons]	66
PMI	66
Brief on mission/situation to soldiers	67
OPORD with graphics	67
Awareness of enemy TTPs	68
Ensure full med pouch	69
Knowledge of IA assets	70
Get uniform/mask to hide informant's identity	71
HIDE System and digital cameras	72
Detainee facility location	73
Backbrief mission	74
Extra ammo	74
Coordinate for use of adjacent house for security	75
Establish meeting location	76
Get troops ready	77
Get attack helicopters	78
Consequence management cannot be learned in states - must be on streets [OJT]	79
PMCS	80

Bin 2	
Movement drills	P2
Conduct movement/rollout	9
Stop vehicle	11
Scan hot spots (thermals)	14
Bounding overwatch	17
Coordinate/establish rally point	39
Seek alternate route	40
Bypass drills	41
Movement with Iraqis	64
Movement to contact	81
Move mounted	81
Roll-over drills	82
Fire drills	83
Recovery drills	84
Vehicles in file	85
defensive and offensive formations with Strykers	86
Convoy travel during emergency (escorting casualties)	87
Signaling [during movement]	88
Defensive driving skills	89
ID vehicle/personnel warning signs	90

Bin 3	
Offensive Reaction drills	
Dismounted search team	
Dismount team drills	
EOF measures [shout, show, shove, shoot warn, shoot kill]	
Clear house/building	
Vehicle search drills/rehearsals/SOPs	
Personnel search drills/rehearsals/SOPs	
ID target	
Engage suspected targets	
Building/structure/room search/clear	
Battle Drill 6 enter/clear room/building	
Platoon attack	
Squad movements/attack	
Raid	
Conduct SSE (sensitive site exploitation)	
Maintain chain of custody for evidence	
Taking detainee	
Complete witness statements for all detainees	
Witness statement completion	
Cordon drills	
Sniper overwatch position	
Joint IA/CF raid	
Use of interpreter	
Secure informant during operations	
Commo/radio/FM drills	
Fire support practice	
Counterfire battle drills	
Establish hasty CP with vehicles	
Destroy IED by gunfire drills	
Assault objective	
Training on SUVs and what they look like	
Shooting from moving vehicle	
Establish checkpoint drills	
Hasty checkpoint drills	
Vehicle capture drill - Stryker in front and behind to box in	
Use of demo for breaching	
Detainee transport drill [what vehicles detainees travel on]	

Bin 4	
Defensive Reaction drills	P4
Mounted/dismounted QRF (response force)	2
React to (P)IED drills	10
Possible locations of IEDs drills	10
Suspected IED drills	10

Take cover	12
Bunker drills [take cover drills]	13
Overwatch drills	17
Establish (pick out) overwatch location	17
ID overwatch positions	17
React to sniper	21
React to contact	25
Blocking/Battle position drills	27
Crater analysis drills	35
Recovery drills people [remains]	37
Use FBCB2	42
Dismounted escort (security) team	43
Use of OP for security	45
Secure area/site drills	46
Establish security	46
Secure vehicle (surroundings)	47
SDM (squad designated marksman) placement	48
React to ambush	49
IED drills - Feet 5 & 25s	50
5 & 5's	50
Vehicle positioning	52
Vehicle emplacement drills	52
Everyone gets in full body armor	57
Evacuation drills	82
Defend fixed site	99
Hasty defense	99
Crew drills [if someone down who replaces]	100
Battle Drills [know/establish for event]	101
Stayback distance TTP/SOP established and practiced	102
Hasty obstacles	103
Incoming round drills	104
React to indirect fire drills	104
FOB lockdown procedures	105
Use Battle Drill 9 ?	106
React to explosion - move to threat location	106
Alarm warning system	107
Alert drills	107
Break contact	108
ID escape routes	108
ID enemy avenues of approach	109
ID suspected engagement areas	110

Bin 5		Bin 6	
First aid/Medevac preparations/drills	P5	IED neutralization drills	P6
Treat casualty	30	Walk & drive IED lanes set b y EOD	117
Evaluate casualty (what can you do to help him)	31	Rehearse with EOD	118
Ground & air	32	Run EOD lanes	118
Casevac drills/SOPs/rehearsals	32		
Medevac PZs	32		
9-line medevac	60		
establish evac routes	111		
Litter teams	112		
Aid litter medic	112		
Skidco drills (litter team)	112		
CLS [combat lifesaver teams] identified	113		
CLS Stryker first responder	113		
First Aid	113		
MASCAL drill [mass casualty drill]	114		
Ensure medics always have personnel at aid station	115		
Ensure CCPs [casualty collection points] are well stocked	116		

Bin 7	
Have resources on hand	P7
TPT (tactical psyops team) on hand	6
Concertina	16
Ensure interpreters on hand	54
THT (tactical HUMINT team) on hand	61
Ensure civil affairs on hand	63
Mission essential items on truck	119

Bin 8	
Vehicle & report SOPs	P8
Request for QRF	2
Request for recovery asset	38
Call EOD support	56
Reports posted in vehicle	120
Confirm counter IED jammers working	121
Warlock system	121
Frequencies & call signs for EOD	122
Radio frequencies for battlespace owners or those traveling through	122
Call MP for support	123
Standards for QRF readiness	124
9-line cards prepared	125

Bin 9		Bin 10	
LN Interaction preparation	P9	Incident location drills	P10
Pass mission to IA - it is their responsibility	29	near & far site security	15
Customs drills	126	sensitive site exploitation drills	33
Language drills	127	Tactical questioning	53
Phone numbers LN government agencies	128	using X-spray	129
		HIIDE system	130
		Digital photos to document	131

Table F.4
Tactical Vignette Survey Codebook: [U] use of developed or Provided Tools/Equipment

Bin 1		Bin 2		Bin 3	
Physical barrier type objects	U1	Notification/alerting objects	U2	Internal observations systems	U3
Cones	8	Alarms [for FOB notification]	2	UAVs for overwatch	5
Concertina wire	9	alarm speakers around FOB	2	RWS	7
razor wire	9	Cones	8	LCMR (lightweight countermortar radar)	12
barbed wire	9	interpreter	15	DVE [driver vision enhancer]	47
Spike strips	23	Blinking lights	29	CDRs display	48
Road spikes	23	Lights	29	NVGs	49
Engineer tape	24	Visible lasers	30	Nods [night vision goggles]	49
Folding barricades	25	Laser pointers	30		
u-shaped picket X barrier	25	Green Beams [lasers]	30		
Hedge Hogs	25	Tracers	31		
Skidcos [litter]	26	warning shots	31		
Concrete barriers	27	Paintballs	32		
T-barriers	27	sirens	33		
Sand bags	28	bullhorns	34		
		loud speaker	34		
		Chem lights	35		
		VS 17 panels	36		
		Placards (bright big)	36		
		Deadly force signs	37		
		Stay back signs	37		
		Signs on vehicles	37		
		EOF signs posted	38		
		warning signs	39		
		Caution signs	39		
		Company TIP/Hotline sign	40		
		Warning triangles	41		
		Hand signals	42		
		taclite on M4	43		
		Clear markings to ID bunkers	44		
		Markings	44		
		Signal devices	45		
		Flashlights	46		

Bin 4		Bin 5	
Protective devices	U4	Vehicles and organic equipment	U5
Lockdown gates of FOB	21	QRF	1
Concrete bunkers	27	Apaches [aerial weapons team]	11
Reinforced bunkers	27	Countermeasure smoke for concealment	13
Reinforced walls	50	Smoke pots on vehicle	13
Hardened buildings	50	MEDEVACs	18
Force protection measures	51	Counterfire battery	19
		Duke system	22
		ORF	52
		recovery tools location on vehicle	53
		Yank chain for recovery	54
		Sniper netting on Stryker	55
		Tow bars/ropes	56
		Fire trucks	57

Bin 6		Bin 7	
Support tools	U6	Enemy intervention items	U7
Escalation of force tools	3	Wands [mirrored handles for searching under vehicles]	10
EOF measures	3	Mirrors	10
Food/water	4	Interpreters to interpret	15
Standoff distance	6	Informant disguises/uniforms	16
smoke or smoke grenades	13	hand cuff straps	90
Sniper teams	14	zip ties	90
Interpreter	15	Zip cuffs	90
IVA [soldier equipment/ballistic vest]	17	flex cuffs	90
Use full kit [IBA protective gear]	17	Xspray	91
Counterfire with mortars	19	Drivers open all vehicle compartments to mitigate booby traps	92
Demolitions	20	Chemical detectors - search	93
Demo equipment	20	Females to search females	94
Duke/cell phone jammers	22	Twist ties	95
Litter	26	detainee kits	96
WALC warrior aid litter & carry	26	SSE kit (bags, tags, cameras, etc.)	97
Skidcos [type of litter]	26	Blindfolds	98
Litter - collapsible	26	HIDE	99
Poleless litter	26	Witness statements in arabic/english	100
550 cord	58		
duct tape	59		
first aid kits	60		
aid pouch	60		
Medical supplies (anything needed in MEV)	60		
CLS bags - (used in FOB and in vehicles)	60		
fire blanket	61		
extra fire extinguisher	62		

wire gloves	63
wire cutters	64
Tourniquets	65
Knife	66
Frgs [fragmentation grenades]	67
M-4 [rifle]	68
"hoolie" tools for breaking doors, locks, windows	69
Breach kits for entering building	69
Bolt cutters	69
SMA -D	70
Jaws of life	71
Boomerang antennas	72
Commo equipment to all elements	72
148 for leaders on ground	72
Extra Locks to replace cut ones	73
Shotguns	74
CS gas (disbursement riot gas)	75
Non-lethal intervention [weapons]	76
Paint ball guns	76
Cammo nets	77
M240	78
M2 .50cal	79
3-5 second movement rule to seek cover	80
SOPs	81
Metal detector	82
SSE bag	83
Gate stickers [for marking cleared houses]	84
Digital camera	85
Collapsible ladders	86
Informant leads to target	87
Weapons systems	88
Reference card local government	89

Table F.5
Tactical Vignette Survey Codebook: [O] Other Critical Items

Bin 1		Bin 2	
Items to include in vehicle	O1	Intel	O2
food & water	2	Know IED hot spots	21
smokes	9	Knowledge of area & insurgent history	45
safety & recovery equipment	19	Know sunni shia fault line	46
Recovery assets	19	Know who is local ISF [Iraqi security force] leader	47
Demolition items	23	Intel on contractors and who they are with	48
Bullhorn	27		
Chem light	28		
Tow bars	29		
CLS Carrier	30		
better dismounted squad radios	31		
Dismounted M240	33		
Digital camera	34		
use X-spray	35		
Hide system	36		
Detainee forms	37		
"Speed ball" extra ammo, mags, grenades	38		
"Med ball" extra medical supplies	39		
extra batteries	40		
flashbangs	41		
Sound receivers - tells direction of bullet shot	42		
flares	43		
Sounding rod to find hiding spots in walls/floors	44		

Bin 3		Bin 4	
Communication	O3	SOPs	O4
interpreter	17	beware baited ambush beware secondary IED's - change backoff	15
Language training	24	distance	52
siren	26	Bring in support while conducting recovery	53
Recorded messages - to clear civilians from area	49	CSH [hospital] locations - route there	54
Know land owners' frequency	50	Know where medics live on FOB	55
Compatible communication with IA	51	Know closest aid station on FOB	56

Bin 5		Bin 6	
additional (support assets)	O5	Additional techniques	O6
		Use TPT to show how much damage caused by	
QRF	1	insurgents	3
QRF	1	Conduct PCC/PCI on IA	5
Ravens	4	Clear building surrounding crash site	8
Air patrols around FOB	4	MITT teams critical working with unknown IA units	10
UAV/aerial coverage	4	Disperse civilians in area	12
helicopter (helo) support	4	Evacuate LNs within local area of VBIED	12
Air assets	6	Gain fire superiority	13
Fire finder (thing that receives the POO)	7	Establish overwatch (snipers and marksman)	14
IA/IP support	11	Using Iraqi forces	16
Interpreter	17	Use non-lethal buckshot	32
Interpreters	17	Movement techniques around battlefield	59
EOD	18	Common sense	60
EOD	18	Train	61
EOD robot	18	Don't feed sniper more casualties	62
wrecker and wrecking crew	20	Rehearse [sniper] scenario - not same as react to contact	63
Civil affairs reps	22	Pray	64
Concrete "C" bunkers established on FOB	25	Try to help trail gunner	65
Guard towers	57	Rotate duties	66
Police dogs	58	No civilian radios walkie talkies	67
		Fob security team	68
		Helmet cameras	69
		Run them through HIDE	70
		Run them through X-spray	71
		Never pay for terrorist damage - it would encourage it	72

G. TACTICAL VIGNETTE SURVEY FREQUENCY RESPONSES BY EVENT

**Table G.1
Tactical Vignette Survey Master Response List**

	Listed responses	blank/no experience	usable responses
CM	365	102	263
CS	735	103	632
DP	1610	89	1521
HD	1178	101	1077
IED	3831	96	3735
IF	879	99	780
MS	700	100	600
QRF	4138	81	4057
RD	904	96	808
ROE	1146	101	1045
Total	15486	968	14518

**Table G.2
Tactical Vignette Survey Response List - Consequence Management (CM)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Concertina wire				64%	
Call/Report higher status/contact		52%			
Secure area	50%				
Deadly force signs				45%	
Get in mortar barrier	40%				
Cones				36%	
Cordon area	35%				
EOF signs posted				27%	
warning signs				27%	
Assist casualties	25%				
Assess casualties	25%				
Call & update squads		22%			
Cordon Drills			22%		
Convoy to site	20%				
Isolate with vehicles	20%				
Skidcos [litter]				18%	
first aid kits				18%	
Engage locals for intel	15%				
Treat Local national casualties	15%				
Call/Report Company/BN/BDE TOC [higher]	15%				
Call 9-line medevac		15%			
Coordinate for Civil Affairs support		11%			
React to contact			11%		
React to ambush			11%		
PMCS			11%		
Battle Drills [know/establish for event]			11%		
Get grid for area/location	10%				
Put vehicles in overwatch and road block	10%				
Maneuver Strykers to facilitate Casevac, support, exfil, assault	10%				
Begin casevac	10%				
Collect witness statements	10%				
Alert convoy of situation	10%				
Gather info/intel	10%				
				>49%	
				25-49%	
				15-24%	
				10-14%	

**Table G.3
Tactical Vignette Survey Response List – Cordon and Search (CS)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Call/Report higher status/contact		61%			
hoolie" tools for breaking doors, locks, windows				41%	
Cordon area	33%				
Concertina wire				27%	
Secure area	25%				
Search houses including informants	25%				
Provide informant mask	25%				
Deadly force signs				24%	
Cones				19%	
warning signs				19%	
Isolate with vehicles	16%				
Maneuver Strykers to facilitate Casevac, support, exfil, assault	14%				
Escalation of force tools				14%	
EOF signs posted				14%	
Building/structure/room search/clear			13%		
Engage locals for intel	12%				
Call and link with Iraqi Army		11%			
Put vehicles in overwatch and road block	11%				
Dismounted security	11%				
Search area of enemy location	11%				
Gather info/intel	11%				
block foot & vehicular traffic	11%				
					>49%
					25-49%
					15-24%
					10-14%

**Table G.4
Tactical Vignette Survey Response List – Dismounted Patrol (DP)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Call/Report higher status/contact		78%			
Seek cover	68%				
Assess casualties	64%				
React to contact			38%		
Engage	36%				
Maneuver Strykers to facilitate Casevac, support, exfil, assault	32%				
3D's (distance, direction, description)	31%				
Begin casevac	31%				
Countermeasure smoke for concealment				27%	
Skidcos [litter]				27%	
first aid kits				26%	
Allow no further damage [protect] to civ contractor casualties	26%				
React to sniper			25%		
ID enemy location	23%				
Call/Report Company/BN/BDE TOC [higher]	23%				
ID who is shooting	21%				
Deploy smoke	20%				
Assist casualties	20%				
CLS [combat lifesaver teams] identified			19%		
Boomerang antennas				17%	
Secure area	17%				
Eliminate threat	15%				
Close distance	15%				
Ground & air [medevac]			15%		
Isolate with vehicles	15%				
Call & update squads		12%			
Determine source of gunfire [location]	11%				
Analyze situation	11%				
Battle Drill 2 [react to contact]	11%				
					>49%
					25-49%
					15-24%
					10-14%

**Table G.5
Tactical Vignette Survey Response List – Hasty/Deliberate Checkpoint (HD)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Call/Report higher status/contact		70%			
Secure both ends of bridge	60%				
Concertina wire				51%	
Deadly force signs				46%	
Establish checkpoint drills			43%		
warning signs				40%	
EOF signs posted				38%	
Cones				35%	
Search cars	27%				
Secure area	23%				
Call & update squads		20%			
block foot & vehicular traffic	19%				
Vehicle search drills/rehearsals/SOPs			17%		
Employ concertina wire	17%				
Put vehicles in overwatch and road block	17%				
Check surroundings	17%				
Provide overwatch with personnel	17%				
Establish search area	16%				
Get in mortar barrier	14%				
Personnel search drills/rehearsals/SOPs			13%		
Call and link with Iraqi Army		12%			
Analyze situation	12%				
Create blocking barricades	11%				
Maneuver Strykers to facilitate Casevac, support, exfil, assault	11%				
Escalation of force tools				10%	
Wands [mirrored handles for searching under vehicles]				10%	
Spike strips				10%	
Isolate with vehicles	10%				
					>49%
					25-49%
					15-24%
					10-14%

**Table G.6
Tactical Vignette Survey Response List – Possible Improvised Explosive Device (IED)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Call/Report higher status/contact		73%			
Call EOD	45%				
React to (P)IED drills			38%		
Stop or pull off route/MSR	35%				
Secure area	35%				
Call/Report Company/BN/BDE TOC [higher]	35%				
Deadly force signs				33%	
Cordon area	30%				
Coordinate with EOD		28%			
Check for IEDs	26%				
Concertina wire				26%	
Cones				24%	
Call EOD		19%			
Call in 9-line IED report		19%			
Call & update squads		18%			
Create standoff	18%				
Warning signs				16%	
EOF signs posted				14%	
Alert/clear locals	13%				
Conduct 5/25 around your victors [vehicles]	13%				
Bullhorns				12%	
Get in mortar barrier	11%				
Cordon drills			11%		
IED drills - Feet 5 & 25s			10%		
Look for [initiation] wire	10%				
Alert convoy of situation	10%				
Standoff distance				10%	
Secure area/site drills			10%		
					>49%
					25-49%
					15-24%
					10-14%

**Table G.7
Tactical Vignette Survey Response List – JSS/COP/FOB Takes Indirect Fire (IF)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Call/Report higher status/contact		76%			
Seek cover	53%				
Incoming round drills			40%		
Do not move until rounds [incoming] cease	38%				
Assess casualties	38%				
Get in mortar barrier	32%				
Concrete barriers				31%	
Establish accountability of personnel	30%				
Skidcos [litter]				20%	
Call/Report Company/BN/BDE TOC [higher]	18%				
Change uniform policy to "kit" [full force protection gear]	18%				
Bring up uniform posture	17%				
Assist casualties	16%				
first aid kits				16%	
Ground & air [medevac]			15%		
Begin casevac	13%				
Report damages/injuries/sitrep	12%				
Analyze situation	10%				
Increase security	10%				
Alert convoy of situation	10%				
Assess Damage	10%				
Call & update squads		10%			
					>49%
					25-49%
					15-24%
					10-14%

**Table G.8
Tactical Vignette Survey Response List – Secure a Habitual Meeting Site (MS)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Secure area	49%				
Call/Report higher status/contact		39%			
Concertina wire				34%	
Deadly force signs				31%	
Cones				26%	
Cordon area	25%				
Get in mortar barrier	24%				
Building/structure/room search/clear			23%		
Conduct map recon	22%				
warning signs				20%	
Call and link with Iraqi Army		18%			
Take building and establish "strong point"	18%				
Secure area/site drills			18%		
EOF signs posted				17%	
coordinate snipers	16%				
Put vehicles in overwatch and road block	16%				
Establish high ground	16%				
Establish movement & withdrawal plan	14%				
Isolate with vehicles	14%				
Call & update squads		12%			
Convoy to site	12%				
Search people	12%				
Maneuver Strykers to facilitate Casevac, support, exfil, assault	12%				
Increase security	12%				
block foot & vehicular traffic	12%				
Provide overwatch with personnel	12%				
Spike strips				11%	
Metal detector				11%	
interpreter					11%
Conduct recon			10%		
Engage locals for intel	10%				
ID who is shooting	10%				
Gather info/intel	10%				
Call/Coordinate IA/IP support	10%				
					>49%
					25-49%
					15-24%
					10-14%

**Table G.9
Tactical Vignette Survey Response List – Quick Reaction Force (QRF)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
'Call/Report higher status/contact		78%			
Secure area	43%				
Assess casualties	39%				
React to contact			31%		
Begin casevac	31%				
Call & update squads		28%			
Engage	28%				
Deadly force signs				23%	
Call/Report Company/BN/BDE TOC [higher]	21%				
Cones				19%	
Skidcos [litter]				19%	
Call and link with Iraqi Army		19%			
Commo/radio/FM drills			18%		
Building/structure/room search/clear			18%		
Ground & air			17%		
Concertina wire				17%	
Assist casualties	17%				
Cordon area	15%				
Analyze situation	15%				
Suppress enemy fire	14%				
3D's (distance, direction, description)	14%				
Request air support		13%			
MEDEVACs				13%	
Battle Drills [know/establish for event]			13%		
first aid kits				12%	
ID who is shooting	11%				
Medevac coordination		11%			
Call for QRF	11%				
CLS [combat lifesaver teams] identified			11%		
Eliminate threat	10%				
warning signs				10%	
ID enemy location	10%				
					>49%
					25-49%
					15-24%
					10-14%

**Table G.10
Tactical Vignette Survey Response List – Conduct a Raid (RD)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
Building/structure/room search/clear			42%		
Call/Report higher status/contact		39%			
Call and link with Iraqi Army		34%			
Cordon area	28%				
Conduct raid (at a later date)	28%				
"hoolie" tools for breaking doors, locks, windows				24%	
Call/Coordinate IA/IP support	23%				
Conduct recon with informant to ID target	22%				
Split U.S. sections within IA units for RAID	17%				
Provide scheme of operation but not location	17%				
interpreter				16%	
Demolitions				16%	
Establish movement & withdrawal plan	15%				
Provide informant mask	15%				
Call & update squads		15%			
Commo/radio/FM drills			15%		
Battle Drills [know/establish for event]			15%		
Rehearsal with IA			13%		
hand cuff straps				13%	
Blindfolds				13%	
IA will be main effort in joint search/raid	12%				
Use IA to search/clear	12%				
React to contact			11%		
Increase security	11%				
Gather info/intel	11%				
Coordinate with IA leader/commander	11%				
					>49%
					25-49%
					15-24%
					10-14%

**Table G.11
Tactical Vignette Survey Response List – Rules of Engagement: Escalation of Force (ROE)**

Response Item	Actions	Coordination	Prior Preparation	Tools	Other
'Call/Report higher status/contact		85%			
Deadly force signs				66%	
5 Ss (shout, show, shove, shoot warn, shoot kill)	46%				
EOF measures [shout, show, shove, shoot warn, shoot kill]			34%		
warning signs				32%	
Brief on ROE			25%		
Assess casualties	22%				
Engage	19%				
ID who is shooting	17%				
Analyze situation	17%				
EOF signs posted				16%	
Non-lethal intervention [weapons]				16%	
Call/Report Company/BN/BDE TOC [higher]	15%				
Call & update squads		14%			
Eliminate threat	14%				
Destroy	13%				
Secure area	13%				
Stayback distance TTP/SOP established and practiced			13%		
Report damages/injuries/sitrep	10%				
					>49%
					25-49%
					15-24%
					10-14%

H. IRAQ COMMON EVENTS HANDBOOK

**Figure H.1
Iraq Common Events Approaches Handbook**

Iraq Common Event Approaches

**Derived From the Experiences of Over 330 SBCT Combat
Returnees**

Fall 2007

**Published
August 2008**

Notes

Background

In support of the Stryker Warfighting Forum (SWfF), the RAND Arroyo Center surveyed over 330 Stryker Brigade Combat Team Soldiers in early 2008 within three months after they returned from a 15-month combat tour in Iraq. These combat returnees were provided ten scenarios depicting common events faced in Iraq (identified on the following page) and asked to detail, based upon their Iraq experiences, the equipment and techniques that they felt allowed them to best respond to these situations.

Soldiers learn skills at home-station and at mission rehearsal exercises while training to deploy to Iraq, but once in theater they frequently adapt and refine these skills. This booklet captures what these combat returnees found worked during their 15 months in Iraq and summarizes their experiences in this booklet for use by Soldiers and units as they prepare to deploy.

The goal of this booklet is not to present the best, the only, or the doctrinal solution for handling these events, but rather this booklet represents the input and experience of over 330 SBCT combat veterans. The SWfF and RAND Arroyo Center hope these lessons from these combat veterans help you as you prepare for your Iraq deployment.

Good Luck!

Index of Common Event Approaches

- 1. [IED] Patrol comes upon a PIED (possible/suspected IED)**
- 2. [QRF] Respond as a QRF to a “hot” area**
- 3. [DP] Dismounted patrol takes small arms fire (SAF)**
- 4. [ROE] ROE engagement (escalation of force - patrol fires on POVs that get too close to convoy)**
- 5. [HD] Conduct hasty/deliberate checkpoint operations**
- 6. [IF] Indirect fire on FOB/COP/JSS**
- 7. [CS] Conduct cordon and search**
- 8. [RD] Conduct raid with Iraqi Security Forces**
- 9. [MS] Secure a habitual meeting site (District or Neighborhood Advisory council)**
- 10. [CM] Conduct consequence management operations (immediate response following IED/VBIED or combat operations damage/injuries in a neighborhood)**

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

PIED – Possible IED identified by patrol

Common actions/reminders

- Report the following to higher & adjacent:
 - ___ sitrep, status, and/or contact
 - ___ 9-line IED as needed
 - ___ 9-line medevac as needed
- Track frequencies and call signs for enabling units (e.g., EOD)
- Conduct/verify PCCs/PCIs
- Conduct rock drills (internally & with local friendly forces)
- Conduct movement/convoy and withdrawal brief
- Brief Rules of Engagement (ROE)
- Disseminate photos/description of BOLO*/high value targets
- Request air support (AWT*/UAV)
- Call and update squads/platoons/convoy
- Update/mark friendly/enemy and incident locations on FBCB2
- Prepare PAO/IO release
- Signs – deadly force, warning, EOF (for vehicles & cordon)
- Bullhorns
- Blinking lights
- Chem lights
- Visible lasers (for C2 at night)
- Cones
- Concertina wire (pickets, pounder, & wire gloves)
- First aid kits/extra supplies/medball
- Litter/skidcos
- Non-lethal intervention weapons
- Detainee kits*
- Hand cuff straps/zip ties
- Sensitive Site Exploitation kits (SSE)*
- Interpreter

*AWT – Air Weapons Team

*BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

PIED – Possible IED identified by patrol

Event execution checklist

- Stop/pull off route/MSR
- Create standoff (from suspected IED)
- Conduct PIED drills (5 & 25s)
- Secure area
- Cordon area
- Alert/clear locals
- Put vehicles in overwatch & roadblock (foot and vehicular traffic)
- Use Binos, RWS, vehicle optics to identify IED
- Mark IED or cordon as possible
- Update higher: send full IED/UXO report
- Mark on FBCB2
- Call/coordinate with explosive ordnance disposal (EOD)
- Call/coordinate UAV support
- Engage locals for intelligence about IED
- Check surroundings/look for initiation wires & other IEDs
- Await further orders (await EOD or mark/bypass)
- Lead EOD to IED (secure & protect EOD)
- Contingency plan/unit battle drill for IED disposal if EOD unavailable
- EOD reduces IED
- Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE (forensics/evidence gathering)
- Continue mission
- Provide detailed/complete IED/event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches **Derived from Recent SBCT Combat Returnees**

QRF – Respond as QRF to “hot” area

- Report the following to higher and adjacent:
 - ____ sitrep, status, and/or contact
 - ____ 9-line medevac as needed
- Conduct/verify PCCs/PCIs
- Request air support (AWT*/UAV)

ion actions/reminders

- Post all reports (9-line & others) in vehicles
- Call and update squads/platoons/convoy
- Prepare PAO/IO release

Equipment/kits/tools to support operations

- | | |
|--|--|
| <input type="checkbox"/> Signs – deadly force, warning, EOF (for vehicles & cordon as necessary) | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> Countermeasure smoke for concealment |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Non-lethal intervention weapons |
| <input type="checkbox"/> VS17 panels for marking | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Cones | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Concertina wire (pickets, pounder, & wire gloves) | <input type="checkbox"/> Sensitive site exploitation kits (SSE)* |
| <input type="checkbox"/> Spike strips | <input type="checkbox"/> Interpreter |
| <input type="checkbox"/> “Hoolie tools*” for breaking/entering/repairing doors, locks, windows | <input type="checkbox"/> Vehicle tow bars/chains/ropes prepared for recovery mission |
| <input type="checkbox"/> “Jaws of life” | |
| <input type="checkbox"/> Speedball (extra ammo, magazines, grenades, etc.) | |
| <input type="checkbox"/> First aid kits/extra supplies/medball | |
| <input type="checkbox"/> CLS bags stocked | |

*AWT – Air Weapons Team

*Hoolie tools – Kit with various unit designated tools (e.g., crowbars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

QRF – Respond as QRF to “hot” area

Event execution checklist

- Secure site/area (360 degree cordon when possible)
- Establish overwatch (snipers/marksmen)
- Alert/clear locals
- Assess casualties for urgency & assist/treat casualties (including Local Nationals [LNs])
- Send complete BDA of site (equipment & personnel)
- Maneuver Strykers to facilitate support to casevac, exfiltration, or assault
- Begin casevac/medevac procedures (ground/air as situation dictates)
- Coordinate civilian ambulance for Local National (LN) casualties
- Alert higher medical (aid station/CSH) of incoming casualty situation
- Call & coordinate Iraqi Army & Iraqi Police involvement
- React to contact/ambush
- Identify 3D's (distance, direction, description) of gun fire
- Determine source of gunfire (shooter & location)
- Mark on FBCB2
- Coordinate UAV/air support
- Suppress enemy gunfire
- Conduct squad movements/attack
- Engage enemy as necessary
- Cordon area as situation allows
- Conduct building/structure/room search & clear operations as necessary
- Call for backup/QRF as necessary
- Conduct recovery operations
- Await further orders
- Engage locals for intelligence
- Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)
- Continue mission
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

DP – Dismounted patrol takes sniper/small arms fire

Common actions/reminders

- | | |
|--|---|
| <input type="checkbox"/> Report the following to higher & adjacent:
____sitrep, status, and/or contact
____ 9-line medevac as needed | <input type="checkbox"/> Request air support (AWT*/UAV) |
| <input type="checkbox"/> Assign jobs/teams to each soldier (e.g., security, breach, litter) | <input type="checkbox"/> Call & update squads/platoons/convoy |
| <input type="checkbox"/> Brief Rules of Engagement (ROE) | <input type="checkbox"/> Post all reports (9-line & others) in vehicles |
| | <input type="checkbox"/> Prepare PAO/IO release |

Equipment/kits/tools to support operations

- Signs – deadly force, warning, EOF (for vehicles & cordon as necessary)
- Bullhorns
- Blinking lights
- Visible lasers (for C2 at night)
- Concertina wire (pickets, pounder, & wire gloves)
- "Hoolie tools*" for breaking/entering/repairing doors, locks, windows
- Extra locks to replace cut ones
- First aid kits/extra supplies/medball
- CLS bags stocked
- Litter/skidcos
- Countermeasure smoke for concealment
- Non-lethal intervention weapons
- Detainee kits*
- Hand cuff straps/zip ties
- Sensitive Site Exploitation kits (SSE)*
- Interpreter

*AWT – Air Weapons Team

*Hoolie tools – Kit with various unit designated tools (e.g., crowbars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

DP – Dismounted patrol takes sniper/small arms fire

Event execution checklist

- React to sniper/contact
- Seek cover
- Assess casualties for urgency & assist/treat as necessary
- Engage/suppress enemy fire
- Secure area
- Cordon area
- Begin casevac/medevac procedures (ground/air as situation dictates)
- Alert/clear locals
- Isolate with vehicles
- Maneuver Strykers to facilitate support to casevac, exfiltration, or assault
- Identify 3D's (distance, direction, description) of gun fire
- Determine source of gunfire (shooter & location)
- Mark on FBCB2
- Request/coordinate air weapons team/UAV
- Request QRF/backup
- Search teams designated
- Building/structure/room search and/or clear as necessary
- Engage locals for intelligence
- Squad/platoon movement and/or attack
- Continue mission/break contact
- Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE (forensics/evidence gathering)
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

ROE – ROE engagement (escalation of force) of POV with SAF

Common actions/reminders

- | | |
|---|--|
| <input type="checkbox"/> Report the following to higher & adjacent:
____sitrep, status, and/or contact
____9-line medevac as needed | <input type="checkbox"/> Disseminate photos/
description of BOLO*/high
value targets |
| <input type="checkbox"/> Conduct/verify PCCs/PCIs | <input type="checkbox"/> Update/mark friendly/enemy
and incident locations on
FBCB2 |
| <input type="checkbox"/> Assign jobs/teams to each soldier (e.g.,
security, breach, litter) | <input type="checkbox"/> Call & update squads/
platoons/convoy |
| <input type="checkbox"/> Conduct movement/convoy and withdrawal
brief | <input type="checkbox"/> Prepare PAO/IO release |
| <input type="checkbox"/> Brief Rules of Engagement (ROE) | |

Equipment/kits/tools to support operations

- | | |
|---|--|
| <input type="checkbox"/> Signs – deadly force, warning, EOF (for
vehicles & cordon as necessary) | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> Countermeasure smoke for
concealment |
| <input type="checkbox"/> Blinking lights | <input type="checkbox"/> Non-lethal intervention
weapons |
| <input type="checkbox"/> Flares | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Taclite on weapons/M4 | <input type="checkbox"/> Digital camera |
| <input type="checkbox"/> Tracers for gunner weapons | <input type="checkbox"/> Xspray |
| <input type="checkbox"/> Cones | <input type="checkbox"/> Sensitive Site Exploitation kits
(SSE)* |
| <input type="checkbox"/> Concertina wire (pickets, pounder, & wire
gloves) | <input type="checkbox"/> Interpreter |
| <input type="checkbox"/> Speedball (extra ammo, magazines,
grenades, etc.) | <input type="checkbox"/> Reference card local
government names & phone
numbers |
| <input type="checkbox"/> First aid kits/extra supplies/medball | |

*BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

ROE – ROE engagement (escalation of force) of POV with SAF

Event execution checklist

- Employ Escalation of Force (EOF) measures (shout, show, shove, shoot to disable, shoot to kill/destroy)
- Employ firing EOF discipline (tires, engine block, windshield, driver)
- Engage as necessary
- Get vehicle description & license plate numbers
- Trail gunner signals to stop by radio (laser at night)
- Stop or pull off route/MSR
- Secure area/site
- Search car(s) as necessary
- Search passengers as necessary
- Assess & assist casualties
- Begin casevac (ground/air) as necessary
- Detain individuals as necessary
- Assess damage; issue "claim" card as necessary
- Take digital photos to document
- Continue the mission
- Complete (EOF) report following mission completion
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operations (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

HD – Conduct Hasty/Deliberate Check Point

Common actions/reminders

- | | |
|--|---|
| <input type="checkbox"/> Report the following to higher & adjacent:

____sitrep, status, and/or

contact | <input type="checkbox"/> Brief Rules of Engagement (ROE) |
| <input type="checkbox"/> Conduct/verify PCCs/PCIs | <input type="checkbox"/> Disseminate photos/description of BOLO*/high value targets |
| <input type="checkbox"/> Assign jobs/teams to each soldier (e.g., security, breach, litter) | <input type="checkbox"/> Update/mark friendly/enemy and incident locations on FBCB2 |
| <input type="checkbox"/> Conduct rock drills (internally & with local friendly forces) | <input type="checkbox"/> Call & update squads/platoons/convoy |
| <input type="checkbox"/> Conduct movement/convoy and withdrawal brief | <input type="checkbox"/> Prepare PAO/IO release |

Equipment/kits/tools to support operations

- | | |
|--|--|
| <input type="checkbox"/> Signs – deadly force, warning, EOF (for vehicles & cordon as necessary) | <input type="checkbox"/> Spike strips |
| <input type="checkbox"/> Sirens | <input type="checkbox"/> Sandbags |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> Speedball (extra ammo, magazines, grenades, etc.) |
| <input type="checkbox"/> Blinking lights | <input type="checkbox"/> First aid kits/extra supplies/medball |
| <input type="checkbox"/> Chem lights | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Flares | <input type="checkbox"/> Helmet cameras |
| <input type="checkbox"/> Signal devices | <input type="checkbox"/> Wands (mirrored handles for looking under vehicles) |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Non-lethal intervention weapons |
| <input type="checkbox"/> Taclite on weapon/M4 | <input type="checkbox"/> Females available to search females |
| <input type="checkbox"/> VS17 panels | <input type="checkbox"/> Metal detector |
| <input type="checkbox"/> Engineer tape | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Cones | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Concertina wire (pickets, pounder, & wire gloves) | <input type="checkbox"/> Xspray |
| <input type="checkbox"/> Concrete barriers | <input type="checkbox"/> Interpreter |
| <input type="checkbox"/> Folding barricades | |
| <input type="checkbox"/> Blocking barricades | |
| <input type="checkbox"/> Speed bumps | |

*BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

* Sensitive Site Exploitation

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

HD – Conduct Hasty/Deliberate Check Point

Event execution checklist

- Call & coordinate Iraqi Army & Iraqi Police involvement (brief late to avoid compromise)
- Secure both ends of bridge (150 meters)
- Secure area
- Set up serpentine: avoid suicide bombers
- Put vehicles in overwatch & roadblock positions (foot and vehicular traffic)
- Establish “trigger” lines for non-compliance
- Create fighting positions for personnel
- Establish detainee area
- Provide overwatch with personnel
- Establish search area
- Search teams identified
- Establish search plan (all or random numbers)
- Employ Escalation of Force (EOF) measures (shout, show, shove, shoot to disable, shoot to kill/destroy)
- Conduct “vehicle search” drill
- Conduct personnel search drill
- Coordinate UAV overwatch
- Engage locals for intelligence
- Detain/arrest as necessary
- Move suspects to safe/secure area for tactical questioning
- Have Tactical HUMINT Team (THT)/interrogators available
- Coordinate with higher for law enforcement program (LEP) team to conduct SSE* (forensics/evidence gathering) as necessary
- Continue mission
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

IF – Indirect Fire on Platoon/Company/Battalion JSS/COP/FOB

Common actions/reminders

- Report the following to higher & adjacent:
 - ___ sitrep, status, and/or contact
 - ___ 9-line medevac as needed
- Request air support (AWT*/UAV)
- Call & update squads/platoons/convoy
- Prepare PAO/IO release

Equipment/kits/tools to support operations

- Alarms for JSS/COP/FOB notification
- Sirens
- Bullhorns
- Concrete barriers
- Sandbags
- First aid kits/extra supplies/medball
- Litter/skidcos

* AWT – Air Weapons Team

* SSE kits – Kits with various unit designated items (e.g. rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

IF – Indirect Fire on Platoon/Company/Battalion JSS/COP/FOB

Event execution checklist

- Seek/take cover
- Clear markings that identify bunkers/mortar barriers
- Get in mortar barrier
- Do not move until incoming rounds cease
- Move to established rally point
- Assess casualties for urgency & assist/treat casualties (including local nationals [LNs])
- Construct Casualty Collection Point (CCP)/execute Mass Casualty (MASCAL) drill
- Begin casevac (ground/air)
- Alert higher medical (aid station/CSH) of incoming casualty situation
- Establish accountability of personnel
- Employ JSS/COP/FOB lockdown procedures
- Change/upgrade uniform policy to full kit (higher force protection level)
- Increase JSS/COP/FOB security
- Conduct crater analysis
- Confirm if counterfire radar acquired incoming round Point of Origin (POO)
- Conduct counterfire mission as necessary
- Reinforce vigilance of all guards/towers
- Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

CS – Conduct Cordon & Search

Common actions/reminders

- | | |
|---|---|
| <input type="checkbox"/> Report the following to higher & adjacent:
___ sitrep, status, and/or contact
___ 9-line medevac as needed | <input type="checkbox"/> Conduct movement/convoy and withdrawal brief |
| <input type="checkbox"/> Conduct rock drills (internally & with local friendly forces) | <input type="checkbox"/> Brief Rules of Engagement (ROE) |
| <input type="checkbox"/> Conduct rehearsals (internally & with local friendly forces) | <input type="checkbox"/> Disseminate photos/description of BOLO*/high value targets |

Equipment/kits/tools to support operations

- | | |
|--|--|
| <input type="checkbox"/> Signs – deadly force, warning, EOF (for vehicles & cordon as necessary) | <input type="checkbox"/> First aid kits/extra supplies/medball |
| <input type="checkbox"/> Sirens | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> Non-lethal intervention weapons |
| <input type="checkbox"/> Blinking lights | <input type="checkbox"/> Police dogs |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Metal detector |
| <input type="checkbox"/> Cones | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Concertina wire (pickets, pounder, & wire gloves) | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Folding barricades | <input type="checkbox"/> Xspray |
| <input type="checkbox"/> “Hoolie tools*” for breaking/entering/repairing doors, locks, windows | <input type="checkbox"/> Sensitive site exploitation (SSE) kits* |
| <input type="checkbox"/> Demolitions | <input type="checkbox"/> Informant disguises/uniform/ mask |
| <input type="checkbox"/> Gate stickers to mark cleared houses | <input type="checkbox"/> Interpreter |

*BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

*Hoolie tools – Kit with various unit designated tools (e.g., crowbars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches **Derived from Recent SBCT Combat Returnees**

CS – Conduct Cordon & Search

Event execution checklist

- Call & coordinate Iraqi Army & Iraqi Police involvement (brief specifics late to avoid compromise)
- Conduct recon (map/driving) with informant as available
- Establish (by recon) cordon/search area & withdrawal plan
- Search teams identified/designated
- Secure area/site
- Cordon area
- Put vehicles in overwatch & roadblock (foot and vehicular traffic)
- Maneuver Strykers to facilitate support to casevac, exfiltration, or assault
- Establish dismounted security
- Establish overwatch (snipers/marksmen)
- Coordinate UAV overwatch
- Search houses within cordon including informant's
- Conduct building/structure/room search & clear operations as necessary
- Employ helmet cameras
- Confiscate contraband
- Engage locals for intelligence
- Detain/arrest as necessary
- Move suspects to safe/secure area for tactical questioning
- Have Tactical HUMINT Team (THT)/interrogators available
- Coordinate with higher for law enforcement program (LEP) team to conduct SSE (forensics/evidence gathering) as necessary
- Continue mission
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

RD – Conduct a raid in coordination with the Iraqi Army

Common actions/reminders

- | | |
|---|---|
| <input type="checkbox"/> Report the following to higher and adjacent:
____ sitrep, status, and/or contact
____ 9-line medevac as needed | <input type="checkbox"/> Brief Rules of Engagement (ROE) |
| <input type="checkbox"/> Conduct/verify PCCs/PCIs | <input type="checkbox"/> Disseminate photos/description of BOLO*/high value targets |
| <input type="checkbox"/> Conduct rock drills (internally & with local friendly forces) | <input type="checkbox"/> Request air support (AWT*/UAV) |
| <input type="checkbox"/> Conduct rehearsals (internally & with local friendly forces) | <input type="checkbox"/> Call & update squads/platoons/convoy |
| <input type="checkbox"/> Conduct movement/convoy and withdrawal brief | <input type="checkbox"/> Prepare PAO/IO release |

Equipment/kits/tools to support operations

- | | |
|--|--|
| <input type="checkbox"/> Signs – deadly force, warning, EOF (for vehicles & cordon as necessary) | <input type="checkbox"/> Collapsible ladders |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> First aid kits/extra supplies/medball |
| <input type="checkbox"/> Blinking lights | <input type="checkbox"/> Combat Lifesaver bags stocked |
| <input type="checkbox"/> Chem lights | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Non-lethal intervention weapons |
| <input type="checkbox"/> Taclite for weapons/M4 | <input type="checkbox"/> NVGs |
| <input type="checkbox"/> VS17 panels for marking | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Cones | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Concertina wire (pickets, pounder, & wire gloves) | <input type="checkbox"/> Blindfolds |
| <input type="checkbox"/> Spike strips | <input type="checkbox"/> Digital camera |
| <input type="checkbox"/> "Hoolie tools*" for breaking/entering/repairing doors, locks, windows | <input type="checkbox"/> Xspray |
| <input type="checkbox"/> Demolitions | <input type="checkbox"/> Informant disguises/uniform/mask |
| <input type="checkbox"/> Speedball (extra ammo, magazines, grenades, etc.) | <input type="checkbox"/> Sensitive Site Exploitation kits (SSE)* |

*AWT – Air Weapons Team

*BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

RD – Conduct a raid in coordination with the Iraqi Army

Event execution checklist

- Call & coordinate Iraqi Army & Iraqi Police support/involvement
- Assess Iraqi asset availability & compatibility
- Split US sections with Iraqi Army units
- Determine Iraqi Army role in search/clear (main/subordinate)
- Provide scheme of operation but NOT location & time (hold back)
- Conduct recon (map/driving) with informant as available
- Establish movement & withdrawal plan
- Assign jobs/teams to each Soldier (e.g., security, breach, litter)
- Secure site/area
- Establish overwatch (snipers/marksmen)
- Cordon area
- Coordinate use of adjacent building/house(s) for security
- Conduct raid
- Engage enemy as necessary
- Conduct building/structure/room search & clear operations
- Search for weapons/explosives
- Establish marking/reporting plan for cleared house/room
- Take detainees
- Conduct personnel search drills
- Assess casualties for urgency & assist/treat casualties
- Begin casevac/medevac procedures (ground/air as situation dictates)
- Call for backup/QRF as necessary
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operations (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

MS – Secure site for a habitual meeting of Iraqi District Advisory Council (DAC)

Common actions/reminders

- | | |
|--|--|
| <input type="checkbox"/> Report the following to higher & adjacent:
_____sitrep, status, and/or contact | <input type="checkbox"/> Disseminate photos/
description of BOLO*/high
value targets |
| <input type="checkbox"/> Assign jobs/teams to each soldier (e.g.,
security, breach, litter) | <input type="checkbox"/> Request air support
(AWT*/UAV) |
| <input type="checkbox"/> Conduct rock drills (internally & with local
friendly forces) | <input type="checkbox"/> Call & update squads/
platoons/convoy |
| <input type="checkbox"/> Brief Rules of Engagement (ROE) | <input type="checkbox"/> Prepare PAO/IO release |

Equipment/kits/tools to support operations

- | | |
|---|---|
| <input type="checkbox"/> Signs – deadly force, warning, EOF
(for vehicles & cordon as necessary) | <input type="checkbox"/> Sandbags |
| <input type="checkbox"/> Sirens | <input type="checkbox"/> Speedball (extra ammo,
magazines, grenades, etc.) |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> First aid kits/extra supplies/
medball |
| <input type="checkbox"/> Blinking lights | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Chem lights | <input type="checkbox"/> Wands (mirrored handles
for looking under vehicles) |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Non-lethal intervention
weapons |
| <input type="checkbox"/> Taclite on weapon/M4 | <input type="checkbox"/> Females available to search
females |
| <input type="checkbox"/> Cones | <input type="checkbox"/> Metal detector |
| <input type="checkbox"/> Concertina wire (pickets, pounder, &
wire gloves) | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Concrete barriers | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Folding barricades | <input type="checkbox"/> Xspray |
| <input type="checkbox"/> Blocking barricades | <input type="checkbox"/> Interpreters/coordinate for
additional interpreters |
| <input type="checkbox"/> Speed bumps | |
| <input type="checkbox"/> Spike strips | |

*AWT – Air Weapons Team

*BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

MS – Secure site for a habitual meeting of Iraqi District Advisory Council (DAC)

Event execution checklist

- Notify meeting participants
- Call/coordinate IA/IP/MiTT support
- Secure area
- Cordon area
- Coordinate use of adjacent building/house(s) for security
- Coordinate/emplace snipers
- Create blocking barricades
- Set up serpentine: avoid suicide bombers
- Put vehicles in overwatch & roadblock positions (foot and vehicular traffic)
- Building/structure/room search/clear
- Take building and establish “strong point”
- Establish movement & withdrawal plan
- Identify/search entrants
- Establish personnel/vehicle search area
- Employ Escalation of Force (EOF) measures (shout, show, shove, shoot to disable, shoot to kill/destroy)
- Be respectful
- Conduct meeting
- Provide detailed/complete event report to S2 staff upon return to FOB
- Execute Information Operation (IO) actions to support/exploit

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

CM – Conduct Consequence Management Operations

Common actions/reminders

- | | |
|---|---|
| <input type="checkbox"/> Report the following to higher & adjacent:
___ sitrep, status, and/or contact
___ 9-line medevac as needed | <input type="checkbox"/> Brief Rules of Engagement (ROE) |
| <input type="checkbox"/> Conduct/verify PCCs/PCIs | <input type="checkbox"/> Call & update squads/
platoons/convoy |
| <input type="checkbox"/> Assign jobs/teams to each soldier
(e.g., security, breach, litter) | <input type="checkbox"/> Prepare PAO/IO release |

Equipment/kits/tools to support operations

- Signs – deadly force, warning, Escalation of Force (EOF) (for vehicles & cordon as necessary)
- Bullhorns
- Cones
- Concertina wire (pickets, pounder, & wire gloves)
- Spike strips
- Body bags
- First aid kits/extra supplies/medball (medical resupply materials)
- Litter/skidcos
- Wands (mirrored handles for looking under vehicles)
- Detainee kits*
- Hand cuff straps/zip ties
- Digital camera
- Xspray
- Sensitive site exploitation kits (SSE)*
- Interpreter
- Reference card local government names & phone numbers

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video camera/recording devices) used to facilitate evidence collection and forensic analysis

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

CM – Conduct Consequence Management Operations

Event execution checklist

- Call/coordinate Civil Affairs & Tactical Psyops Team (TPT) support
- Call & coordinate Iraqi Army & Iraqi Police involvement
- Secure area/site
- Cordon area
- Isolate with vehicles
- Put vehicles in overwatch & roadblock (foot and vehicular traffic)
- Maneuver Strykers to facilitate support to casevac, exfiltration, or assault
- Assess & assist casualties
- Treat Local National (LN) casualties
- Begin casevac
- Engage locals for intelligence
- Detain/arrest as necessary
- Move suspects to safe/secure area for tactical questioning
- Have Tactical HUMINT Team (THT)/interrogators available
- Be respectful of local people and customs
- Never pay for terrorist damage
- Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE (forensics/evidence gathering) as necessary
- Provide detailed/complete event report to S2 staff upon return to FOB
- Use TPT to highlight damage
- Execute Information Operations (IO) actions to support/exploit

Iraq Common Event Approaches

Derived from Recent SBCT Combat Returnees

Consolidated List Covering all 10 common events

Common actions/reminders for all operations

- Report the following to higher and adjacent:
 - ____ sitrep, status, and/or contact
 - ____ 9-line IED as needed
 - ____ 9-line medevac as needed
- Track frequencies & call signs for enabling units (e.g., EOD)
- Conduct/verify PCCs/PCIs
- Assign jobs/teams to each soldier (e.g., security, breach, litter)
- Conduct rock drills (internally & with local friendly forces)
- Conduct rehearsals (internally & with local friendly forces)
- Conduct movement/convoy and withdrawal brief
- Brief Rules of Engagement (ROE)
- Disseminate photos/description of BOLO*/high value targets
- Request air support (AWT*/UAV)
- Post all reports (9-line & others) in vehicles
- Update/mark friendly/enemy and incident locations on FBCB2
- Call and update squads/platoons/convoy
- Prepare PAO/IO release

* AWT - Air Weapons Team

* BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g. blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* Hoolie tools – kit with various unit designated tools (e.g. crow bars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

* SSE kits – Kits with various unit designated items (e.g. rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis.

Iraq Common Event Approaches Derived from Recent SBCT Combat Returnees

Consolidated List Covering all 10 common events

Equipment/kits/tools to support all operations

- | | |
|--|--|
| <input type="checkbox"/> Signs – deadly force, warning, EOF (for vehicles & cordon as necessary) | <input type="checkbox"/> Speedball (extra ammo, magazines, grenades, etc.) |
| <input type="checkbox"/> Alarms for JSS/COP/FOB notification | <input type="checkbox"/> Collapsible ladders |
| <input type="checkbox"/> Sirens | <input type="checkbox"/> Gate stickers to mark cleared houses |
| <input type="checkbox"/> Bullhorns | <input type="checkbox"/> First aid kits/extra supplies/medball |
| <input type="checkbox"/> Blinking lights | <input type="checkbox"/> CLS bags stocked |
| <input type="checkbox"/> Chem lights | <input type="checkbox"/> Litter/skidcos |
| <input type="checkbox"/> Flares | <input type="checkbox"/> Countermeasure smoke for concealment |
| <input type="checkbox"/> Signal devices | <input type="checkbox"/> Helmet cameras |
| <input type="checkbox"/> Visible lasers (for C2 at night) | <input type="checkbox"/> Wands (mirrored handles for looking under vehicles) |
| <input type="checkbox"/> Taclite on weapons/M4 | <input type="checkbox"/> Non-lethal intervention weapons |
| <input type="checkbox"/> Tracers for gunner weapons | <input type="checkbox"/> Police dogs |
| <input type="checkbox"/> VS17 panels for marking | <input type="checkbox"/> Females to search females |
| <input type="checkbox"/> Engineer tape | <input type="checkbox"/> Metal detector |
| <input type="checkbox"/> Cones | <input type="checkbox"/> NVGs |
| <input type="checkbox"/> Concertina wire (pickets, pounder, & wire gloves) | <input type="checkbox"/> Detainee kits* |
| <input type="checkbox"/> Concrete barriers | <input type="checkbox"/> Hand cuff straps/zip ties |
| <input type="checkbox"/> Folding barricades | <input type="checkbox"/> Blindfolds |
| <input type="checkbox"/> Blocking barricades | <input type="checkbox"/> Digital camera |
| <input type="checkbox"/> Speed bumps | <input type="checkbox"/> Xspray |
| <input type="checkbox"/> Spike strips | <input type="checkbox"/> Sensitive Site Exploitation kits (SSE)* |
| <input type="checkbox"/> Sandbags | <input type="checkbox"/> Informant disguises/uniform/mask |
| <input type="checkbox"/> Ensure body bags available | <input type="checkbox"/> Interpreter |
| <input type="checkbox"/> "Hoolie tools*" for breaking/entering/repairing doors, locks, windows | <input type="checkbox"/> Vehicle tow bars/chains/ropes prepared for recovery mission |
| <input type="checkbox"/> Extra locks to replace cut ones | <input type="checkbox"/> Reference card local government names & phone numbers |
| <input type="checkbox"/> "Jaws of life" | |
| <input type="checkbox"/> Demolitions | |

*Hoolie tools – Kit with various unit designated tools (e.g., crowbars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

*Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing questioning, processing, transporting, and incarcerating individuals

*SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

Notes

Back Cover

I. IRAQ COMMON EVENTS APPROACHES HANDBOOK – QUESTIONNAIRE INSTRUCTIONS

Questionnaire Instructions

RAND Arroyo Center Platoon/Company "*Iraq Common Event Approaches*" instructions

The data you provide on the questionnaires allow RAND researchers to provide objective feedback to Senior Army Leaders in many areas and ways (including how well trained our forces are prior to coming to the CTCs and how well prepared they are to address common events faced by units in Iraq) to inform Army decisions.

The data are always kept confidential, with no unit identities ever being disclosed to anyone. The feedback is averaged over many units in order to provide accurate information to leaders without disclosing information about units.

If you have any questions, contact Bryan Hallmark, hallmark@rand.org, 310.393.0411 X6312 or COL S. Jamie Gayton jgayton@rand.org 310.393.0411 X7636 at the RAND Corporation.

Questionnaire/key card instructions

There are 10 different questionnaires, each one associated with a specific event commonly experienced by units in a contingency theater like Iraq. They are:

[IED] Probable, PIED, identified by a patrol

[QRF] Respond as QRF to a "hot" area

[DP] Dismounted Patrol takes sniper/small arms fire

[ROE] ROE engagement (escalation of force) of POV with SAF

[HD] Conduct Hasty/Deliberate Check Point

[IF] Indirect Fire on Platoon/Company/Battalion JSS/COP/FOB

[CS] Conduct Cordon and Search

[RD] Conduct a Raid in coordination with the Iraqi Army

[MS] Secure site for a habitual meeting of Iraqi DAC (District Advisory Council)

[CM] Conduct Consequence Management Operations

Throughout the STX lanes or battle period, we ask that you complete one card the first time that each specific event is faced by the unit for which you are the OC. In the event a unit receives a redo on an event, please ensure that we collect data only from the first time they face a specific event.

Do NOT wait until the end of the rotation to complete the questionnaires. Try to complete them as soon after each STX lane or battle period that the questionnaires' data represent.

The questionnaires are designed to measure how well 1) common actions/reminders are executed, 2) specific skills (from event execution checklist) are employed, and 3) equipment and tools are used. Each item (an action, skill, or equipment/tool) should be scored independent of the others. For example, if secure a site was not done well, but the unit reacted to direct contact well, then secure a site should be scored lower than react to direct contact.

The questionnaire is divided into 4 sections: 1) Header Data; 2) Common Actions/Reminders; 3) Event Execution Checklist (skills); and 4) Equipment, Kits, and Tools. Each section is explained below.

Section I: Header Data

We ask that you provide critical information on the top of the questionnaire; an explanation of each field follows:

OC call sign = please provide your complete call sign. For example, if your call sign is “S12B” then please put down this call sign, and NOT just “12B.”

of rotations with this call sign = You may have been an OC previously, but we only want the number of rotations that you have had this call sign. Your first rotation should be a “1” not a zero.

Training Day = This field should be the last day of the period the data cover. For example, if the data represent observations from training days 3 & 4, this field should be a “4.”

Check if STX/Lanes = Check this box if the data represent STX or lane training. Please do not have STX and “in the box” data on the same questionnaire.

Unit = We need PLT/CO/BN/BDE. We keep the unit identifier confidential! We need this information to correctly correlate the data from this questionnaire with data from other sources. These other sources include training data from unit QTBs.

Rotation = This should identify the rotation number and fiscal year such as 08-08.

Battalion Mission = If a STX Lane, **please identify the title of the STX lane**, if a battalion training event, please identify the title of the training event.

Sections II & III: Common Actions/Reminders Assigned During Battle Period and Skills from the Event Execution Checklist

In this section, the general “lead-in” question is “How well did the unit ...”

If the action or skill should have been done, please circle the appropriate number on the 0-5 scale based on the description provided on the questionnaire.

If you did not observe the action or skill being completed, please circle the UO (unobserved).

If conditions did not require the unit to conduct the action or skill then please circle NA (not applicable).

Marking NA is important because it specifically tells us the item did not need to be done, as opposed to a zero that would mean it was not done, but should have been.

There are a small number of items where the lead-in question is more appropriately “Did the unit request, have, or use ...” These questions have a Yes or No scale that requires no additional explanation.

Sections IV: Equipment, Kits, and Tools (EKT)

Because units usually conduct multiple missions/tasks during a single battle period or STX Lane, we want to be able to assess the availability and use of each piece of relevant EKT for each type of mission/task or STX Lane conducted. To achieve the above, we ask that you mark each column with an X as appropriate:

EKT were listed on unit SOP or equipment lists (X if yes, blank if No);

EKT were available for use (X if yes, blank if No);

EKT (item) should have been used to support the tactical situation – using OC experience/judgment (X if yes, blank if No);

EKT (item) was used to support tactical situation (X if yes, blank if No). Please note that for column 4 to receive an X for a specific EKT, then column 2 must also receive an X for that same EKT;

How well did the unit use EKT to influence the tactical situation (same scale as was described above in Sections II & III).

Thank you for your time and effort completing these important questionnaires. The results will help the Army’s senior leaders make important decisions and improve its warfighting forums.

J. IRAQ COMMON EVENTS APPROACHES HANDBOOK – QUESTIONNAIRE RESPONSE SHEETS



ARROYO CENTER

*Iraq Common Event Approaches – Master
Common Actions & Equipment Questionnaire*

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N	O	T	S	M	C	S	N	U
	D	O	N	F	O	O	U	O	O
	E	N	T	I	D	M	P	B	B
				C	E	P	R	S	S
				H	A	L	E	E	E
				A	T	E	O	R	R
				T	L	R	I	A	V
								B	E
								L	D
								E	
Common actions/reminders									
1. During preparation for execution and reporting, how well did the unit ...									
a. Report the following to higher and adjacent ...									
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO	
2) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO	
3) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO	
b. Track frequencies & call signs for enabling units (e.g., EOD)?	0	1	2	3	4	5	NA	UO	
c. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO	
d. Assign jobs/teams to each Soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA	UO	
e. Conduct rock drills (internally & with Local friendly forces)?	0	1	2	3	4	5	NA	UO	
f. Conduct rehearsals (internally & with Local friendly forces)?	0	1	2	3	4	5	NA	UO	
g. Conduct movement/convoy withdrawal briefs?	0	1	2	3	4	5	NA	UO	
h. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO	
i. Disseminate photos/description of BOLO*/high value targets?	0	1	2	3	4	5	NA	UO	
j. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA	UO	
k. Post all reports (9-line & others) in vehicles?	0	1	2	3	4	5	NA	UO	
l. Update/mark friendly/enemy and incident locations on FBCB2?	0	1	2	3	4	5	NA	UO	
m. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO	
n. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO	

- * Hoolie tools – kit with various unit designated tools (e.g., crow bars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches
- * Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals
- * SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis.
- * AWT – Air Weapons Team
- * BOLO – Be on lookout for (photo/description of individual or vehicle to watch for)

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item was used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?								
					0	1	2	3	4	5	NA	UO	
Speed ball (extra ammo, magazines, grenades, etc.).					0	1	2	3	4	5	NA	UO	
Collapsible ladders					0	1	2	3	4	5	NA	UO	
Gate stickers to mark cleared houses					0	1	2	3	4	5	NA	UO	
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO	
CLS bags stocked					0	1	2	3	4	5	NA	UO	
Litter/skidcos					0	1	2	3	4	5	NA	UO	
Countermeasure smoke for concealment					0	1	2	3	4	5	NA	UO	
Helmet cameras					0	1	2	3	4	5	NA	UO	
Wands (mirrored handles for looking under vehicles)					0	1	2	3	4	5	NA	UO	
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO	
Police dogs					0	1	2	3	4	5	NA	UO	
Females to search females					0	1	2	3	4	5	NA	UO	
Metal detector					0	1	2	3	4	5	NA	UO	
NVGs					0	1	2	3	4	5	NA	UO	
Detainee kits*					0	1	2	3	4	5	NA	UO	
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO	
Blindfolds					0	1	2	3	4	5	NA	UO	
Digital camera					0	1	2	3	4	5	NA	UO	
Xsray					0	1	2	3	4	5	NA	UO	
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO	
Informant disguises/uniform/mask					0	1	2	3	4	5	NA	UO	
Interpreter					0	1	2	3	4	5	NA	UO	
Vehicle tow bars/chains/ropes prepared for recovery mission					0	1	2	3	4	5	NA	UO	
Reference card local government names & phone numbers					0	1	2	3	4	5	NA	UO	



**Iraq Common Event Approaches
ROE Engagement (Escalation of Force)
POV with SAF Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission could be accomplished 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	NOT DONE	NOT SUFFICIENT	SOMEWHAT	MODERATELY	COMPLETELY	SUPERIOR	NOT APPLICABLE	UNOBSERVED
Common actions/reminders								
1. During preparation for execution and reporting, how well did the unit ...								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
2) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO
b. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO
c. Assign jobs/teams to each soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA	UO
d. Conduct movement/convoy withdrawal brief?	0	1	2	3	4	5	NA	UO
e. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO
f. Disseminate photos/description of BOLO*/high value targets?	0	1	2	3	4	5	NA	UO
g. Update/mark friendly/enemy and incident locations on FBCB2?	0	1	2	3	4	5	NA	UO
h. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO
i. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Employ Escalation of Force (EOF) measures (shout, show, shove, shoot to disable, shoot to kill/destroy)?	0	1	2	3	4	5	NA	UO
b. Employ firing EOF discipline (tires, engine block, windshield, driver)?	0	1	2	3	4	5	NA	UO
c. Engage as necessary?	0	1	2	3	4	5	NA	UO
d. Get vehicle description and license plate numbers?	0	1	2	3	4	5	NA	UO
e. Use trail gunner to signal to stop (radio by day laser at night)?	0	1	2	3	4	5	NA	UO
f. Stop/pull off route/MSR?	0	1	2	3	4	5	NA	UO
g. Secure area/site?	0	1	2	3	4	5	NA	UO
h. Search car(s) as necessary?	0	1	2	3	4	5	NA	UO
i. Search passengers as necessary?	0	1	2	3	4	5	NA	UO
j. Assess and assist casualties?	0	1	2	3	4	5	NA	UO
k. Begin casevac (ground/air) as necessary?	0	1	2	3	4	5	NA	UO
l. Detain and/or arrest individuals as necessary?	0	1	2	3	4	5	NA	UO
m. Assess damage; issue "claim" card as necessary?	0	1	2	3	4	5	NA	UO
n. Take digital photos to document?	0	1	2	3	4	5	NA	UO
o. Continue the mission?	0	1	2	3	4	5	NA	UO
p. Complete EOF report following mission completion?	0	1	2	3	4	5	NA	UO
q. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
r. Execute information operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item <u>was</u> used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?									
					0	1	2	3	4	5	NA	UO		
Signs – deadly force, warning, EOF (for vehicles & cordon)					0	1	2	3	4	5	NA	UO		
Bullhorns					0	1	2	3	4	5	NA	UO		
Blinking lights					0	1	2	3	4	5	NA	UO		
Flares					0	1	2	3	4	5	NA	UO		
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO		
TacLite on weapons/M4					0	1	2	3	4	5	NA	UO		
Tracers for gunner weapons					0	1	2	3	4	5	NA	UO		
Cones					0	1	2	3	4	5	NA	UO		
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO		
Speedball (extra ammo, magazines, grenades, etc.)					0	1	2	3	4	5	NA	UO		
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO		
Litter/skidcos					0	1	2	3	4	5	NA	UO		
Countermeasure smoke for concealment					0	1	2	3	4	5	NA	UO		
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO		
Detainee Kits*					0	1	2	3	4	5	NA	UO		
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO		
Digital camera					0	1	2	3	4	5	NA	UO		
Xsray					0	1	2	3	4	5	NA	UO		
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO		
Interpreter					0	1	2	3	4	5	NA	UO		
Reference card local government names & phone numbers					0	1	2	3	4	5	NA	UO		

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xsray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis



**Iraq Common Event Approaches
Raid (RD) in Coordination with Local Army
Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____
Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T	S U F F I C I E N T	S O M E W H A T	M O D E R A T E L Y	C O M P L E T E	S U P E R I O R	N A P P L I C A B L E	U N O B S E R V E D
Common actions/reminders								
1. During preparation for execution and reporting, how well did the unit ...								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
2) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO
b. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO
c. Conduct rock drills (internally & with Iraqi forces)?	0	1	2	3	4	5	NA	UO
d. Conduct rehearsals (internally & with Iraqi forces)?	0	1	2	3	4	5	NA	UO
e. Conduct movement/convoy withdrawal brief?	0	1	2	3	4	5	NA	UO
f. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO
g. Disseminate photos/description of BOLO*/high value targets?	0	1	2	3	4	5	NA	UO
h. Request air support (AWT*/JAV)?	0	1	2	3	4	5	NA	UO
i. Call & update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO
j. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Call & coordinate Local Army & Local Police support/involvement?	0	1	2	3	4	5	NA	UO
b. Assess Iraqi asset availability and compatibility?	0	1	2	3	4	5	NA	UO
c. Split US sections with Local Army units?	0	1	2	3	4	5	NA	UO
d. Determine Local Army role in search/clear (main/subordinate)?	0	1	2	3	4	5	NA	UO
e. Provide scheme of operation but NOT location and time (hold back)?	0	1	2	3	4	5	NA	UO
f. Conduct recon (map/driving) with informant as available?	0	1	2	3	4	5	NA	UO
g. Establish movement and withdrawal plan?	0	1	2	3	4	5	NA	UO
h. Assign jobs/teams to each Soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA	UO
i. Secure site/area?	0	1	2	3	4	5	NA	UO
j. Establish overwatch (snipers/marksmen)?	0	1	2	3	4	5	NA	UO
k. Cordon area?	0	1	2	3	4	5	NA	UO
l. Coordinate use of adjacent building/house(s) for security?	0	1	2	3	4	5	NA	UO
m. Conduct raid?	0	1	2	3	4	5	NA	UO
n. Engage enemy as necessary?	0	1	2	3	4	5	NA	UO
o. Conduct building/structure/room search and clear operations?	0	1	2	3	4	5	NA	UO
p. Search for weapons/explosives?	0	1	2	3	4	5	NA	UO
q. Establish marking/reporting plan for cleared house/room?	0	1	2	3	4	5	NA	UO
r. Detain and/or arrest individuals as necessary?	0	1	2	3	4	5	NA	UO
s. Conduct personnel search drills?	0	1	2	3	4	5	NA	UO
t. Assess casualties for urgency & assist/treat casualties?	0	1	2	3	4	5	NA	UO
u. Begin casevac/medevac procedures (ground/air as situation dictates)?	0	1	2	3	4	5	NA	UO
v. Call for backup/QRF as necessary?	0	1	2	3	4	5	NA	UO
w. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
x. Execute Information Operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item was used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?							
					0	1	2	3	4	5	NA	UO
Signs – deadly force, warning, EOF (for vehicles & cordon as necessary)					0	1	2	3	4	5	NA	UO
Bullhorns					0	1	2	3	4	5	NA	UO
Blinking lights					0	1	2	3	4	5	NA	UO
Chem lights					0	1	2	3	4	5	NA	UO
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO
TacLite for weapons/M4					0	1	2	3	4	5	NA	UO
VS17 Panels for marking					0	1	2	3	4	5	NA	UO
Cones					0	1	2	3	4	5	NA	UO
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO
Spike strips					0	1	2	3	4	5	NA	UO
"Hoolie tools** for breaking/entering/repairing doors, locks, windows					0	1	2	3	4	5	NA	UO
Demolitions					0	1	2	3	4	5	NA	UO
Speed ball (extra ammo, magazines, grenades, etc.)					0	1	2	3	4	5	NA	UO
Collapsible ladders					0	1	2	3	4	5	NA	UO
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO
Combat lifesaver bags (stocked)					0	1	2	3	4	5	NA	UO
Litter/Skidcos					0	1	2	3	4	5	NA	UO
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO
NVGs					0	1	2	3	4	5	NA	UO
Detainee kits*					0	1	2	3	4	5	NA	UO
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO
Blindfolds					0	1	2	3	4	5	NA	UO
Digital camera					0	1	2	3	4	5	NA	UO
Xsray					0	1	2	3	4	5	NA	UO
Informant disguises/uniform/mask					0	1	2	3	4	5	NA	UO
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO
Interpreter					0	1	2	3	4	5	NA	UO

* AWT – Air Weapons Team

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xsray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis.



ARROYO CENTER

Iraq Common Event Approaches - Respond as QRF to "Hot" Area (QRF) Questionnaire

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N	O	T					N	O
	NOT DONE	SUFFICIENT	SOMEWHAT	MODERATELY	COMPLETELY	SUPERIOR	APPLICABLE	UNOBSERVED	
Common actions/reminders									
1. During preparation for execution and reporting, how well did the unit ...									
a. Report the following to higher and adjacent ...									
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO	
2) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO	
b. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO	
c. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA	UO	
d. Post all reports (9-line and others) in vehicles?	0	1	2	3	4	5	NA	UO	
e. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO	
f. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO	
Event execution checklist									
2. During event execution, how well did the unit ...									
a. Secure site/area (360 degree cordon when possible)?	0	1	2	3	4	5	NA	UO	
b. Establish overwatch (snipers/marksman)?	0	1	2	3	4	5	NA	UO	
c. Alert/clear locals?	0	1	2	3	4	5	NA	UO	
d. Assess casualties for urgency & assist/treat casualties (including local nationals [LNs])?	0	1	2	3	4	5	NA	UO	
e. Send complete BDA of site (equipment & personnel)?	0	1	2	3	4	5	NA	UO	
f. Maneuver vehicles to support to casevac, exfiltration, or assault?	0	1	2	3	4	5	NA	UO	
g. Begin casevac/medevac procedures (ground/air as situation dictates)?	0	1	2	3	4	5	NA	UO	
h. Coordinate civilian ambulance for Local National (LN) casualties?	0	1	2	3	4	5	NA	UO	
i. Alert higher medical (aid station/CSH) of incoming casualty situation?	0	1	2	3	4	5	NA	UO	
j. Call & coordinate Local Army and Local Police involvement?	0	1	2	3	4	5	NA	UO	
k. React to contact/ambush?	0	1	2	3	4	5	NA	UO	
l. Identify 3Ds (distance, direction, description) of gun fire?	0	1	2	3	4	5	NA	UO	
m. Determine source of gun fire (shooter & location)?	0	1	2	3	4	5	NA	UO	
n. Mark on FBCB2?	0	1	2	3	4	5	NA	UO	
o. Coordinate UAV/air support?	0	1	2	3	4	5	NA	UO	
p. Suppress enemy gun fire?	0	1	2	3	4	5	NA	UO	
q. Conduct squad movements/attack?	0	1	2	3	4	5	NA	UO	
r. Engage enemy as necessary?	0	1	2	3	4	5	NA	UO	
s. Cordon area as situation allows?	0	1	2	3	4	5	NA	UO	
t. Conduct building/structure/room search & clear operations as necessary?	0	1	2	3	4	5	NA	UO	
u. Call for backup/QRF as necessary?	0	1	2	3	4	5	NA	UO	
v. Conduct recovery operations?	0	1	2	3	4	5	NA	UO	
w. Await further orders?	0	1	2	3	4	5	NA	UO	
x. Engage locals for intelligence?	0	1	2	3	4	5	NA	UO	
y. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA	UO	
z. Continue mission?	0	1	2	3	4	5	NA	UO	
aa. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO	
bb. Execute Information Operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO	

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item was used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?								
					0	1	2	3	4	5	NA	UO	
Signs – deadly force, warning, EOF (for vehicles & cordon as necessary)					0	1	2	3	4	5	NA	UO	
Bullhorns					0	1	2	3	4	5	NA	UO	
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO	
VS 17 panels for marking					0	1	2	3	4	5	NA	UO	
Cones					0	1	2	3	4	5	NA	UO	
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO	
Spike strips					0	1	2	3	4	5	NA	UO	
"Hoolie tools** for breaking/entering/repairing doors, locks, windows					0	1	2	3	4	5	NA	UO	
"Jaws of life"					0	1	2	3	4	5	NA	UO	
Speed ball (extra ammo, magazines, grenades, etc.)					0	1	2	3	4	5	NA	UO	
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO	
CLS bags stocked					0	1	2	3	4	5	NA	UO	
Litter/skidcos					0	1	2	3	4	5	NA	UO	
Countermeasure smoke for concealment					0	1	2	3	4	5	NA	UO	
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO	
Detainee kits*					0	1	2	3	4	5	NA	UO	
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO	
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO	
Interpreter					0	1	2	3	4	5	NA	UO	
Vehicles' tow bars/chains/ropes prepared for recovery mission					0	1	2	3	4	5	NA	UO	

* AWT – Air Weapons Team

* Hoolie tools – kit with various unit designated tools (e.g., crow bars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xsray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis



ARROYO CENTER

Iraq Common Event Approaches – Possible IED (PIED) Identified by Patrol Questionnaire

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission could be accomplished 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T S U F F I C I E N T D O N E	1	2	3	4	5	N A	U O
Common actions/reminders								
2. During preparation for execution and reporting, how well did the unit ...								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
2) 9-line IED?	0	1	2	3	4	5	NA	UO
3) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO
b. Track frequencies and call signs for enabling units (e.g., EOD)?	0	1	2	3	4	5	NA	UO
c. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO
d. Conduct rock drills (internally & with Iraqi forces)?	0	1	2	3	4	5	NA	UO
e. Conduct movement/convoys withdrawal brief?	0	1	2	3	4	5	NA	UO
f. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO
g. Disseminate photos/description of BOLO* /high value targets?	0	1	2	3	4	5	NA	UO
h. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA	UO
i. Call and update squads/platoons/convoys?	0	1	2	3	4	5	NA	UO
j. Update/mark friendly/enemy and incident locations on FBCB2?	0	1	2	3	4	5	NA	UO
k. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Stop/pull off route/MSR?	0	1	2	3	4	5	NA	UO
b. Create standoff (from suspected IED)?	0	1	2	3	4	5	NA	UO
c. Conduct IED drills?	0	1	2	3	4	5	NA	UO
d. Secure area?	0	1	2	3	4	5	NA	UO
e. Cordon area?	0	1	2	3	4	5	NA	UO
f. Alert/clear locals?	0	1	2	3	4	5	NA	UO
g. Put vehicles in overwatch and roadblock (foot and vehicular traffic)?	0	1	2	3	4	5	NA	UO
h. Use Binocs, RWS, vehicle optics to identify IED?	0	1	2	3	4	5	NA	UO
i. Mark IED or cordon as soon as possible?	0	1	2	3	4	5	NA	UO
j. Update higher by sending full IED/UXO report?	0	1	2	3	4	5	NA	UO
k. Mark on FBCB2?	0	1	2	3	4	5	NA	UO
l. Call/coordinate with explosive ordnance disposal (EOD)?	0	1	2	3	4	5	NA	UO
m. Call/coordinate UAV support?	0	1	2	3	4	5	NA	UO
n. Engage locals for intelligence about IED?	0	1	2	3	4	5	NA	UO
o. Check surroundings/look for initiation wires and other IEDs?	0	1	2	3	4	5	NA	UO
p. Await further orders (await EOD or mark/bypass)?	0	1	2	3	4	5	NA	UO
q. Lead EOD to IED (secure and protect EOD)?	0	1	2	3	4	5	NA	UO
r. Execute contingency plan/unit battle drill for IED disposal if EOD was unavailable?	0	1	2	3	4	5	NA	UO
s. Use EOD to reduce the IED?	0	1	2	3	4	5	NA	UO
t. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA	UO
u. Continue mission?	0	1	2	3	4	5	NA	UO
v. Provide detailed/complete IED/event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
w. Execute information operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item was used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?							
					0	1	2	3	4	5	NA	UO
Signs – deadly force, warning, EOF (for vehicles & cordon)					0	1	2	3	4	5	NA	UO
Bullhorns					0	1	2	3	4	5	NA	UO
Blinking lights					0	1	2	3	4	5	NA	UO
Chem lights					0	1	2	3	4	5	NA	UO
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO
Cones					0	1	2	3	4	5	NA	UO
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO
Litter/skidcos					0	1	2	3	4	5	NA	UO
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO
Detainee kits*					0	1	2	3	4	5	NA	UO
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO
Interpreter					0	1	2	3	4	5	NA	UO

* AWT – Air Weapons Team

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis



ARROYO CENTER

**Iraq Common Event Approaches
Secure Meeting Site (MS) Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T S U F F I C I E N T D O N E	S O M E W H A T	M O D E R A T E L Y	C O M P L E T E	S U P E R I O R	N A P P L I C A B L E	U N O B S E R V E D
Common actions/reminders							
1. During preparation for execution and reporting, how well did the unit ...							
a. Report the following to higher and adjacent ...							
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA UO
b. Assign jobs/teams to each Soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA UO
c. Conduct rock drills (internally & with local friendly forces)?	0	1	2	3	4	5	NA UO
d. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA UO
e. Disseminate photos/description of BOLO*/high value targets?	0	1	2	3	4	5	NA UO
f. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA UO
g. Call & update squads/platoons/convoy?	0	1	2	3	4	5	NA UO
h. Prepare PAO/IO release?	0	1	2	3	4	5	NA UO
Event execution checklist							
2. During event execution, how well did the unit ...							
a. Notify meeting participants?	0	1	2	3	4	5	NA UO
b. Call/coordinate IA/IP/MITT support?	0	1	2	3	4	5	NA UO
c. Secure area?	0	1	2	3	4	5	NA UO
d. Cordon area?	0	1	2	3	4	5	NA UO
e. Coordinate use of adjacent building/house(s) for security?	0	1	2	3	4	5	NA UO
f. Coordinate/emplace snipers?	0	1	2	3	4	5	NA UO
g. Create blocking barricades?	0	1	2	3	4	5	NA UO
h. Set up serpentine to guard against suicide bombers?	0	1	2	3	4	5	NA UO
i. Put vehicles in overwatch & roadblock positions (foot & vehicular traffic)?	0	1	2	3	4	5	NA UO
j. Execute building/structure/room searches/clearing?	0	1	2	3	4	5	NA UO
k. Take building and establish "strong point"?	0	1	2	3	4	5	NA UO
l. Establish movement and withdrawal plan?	0	1	2	3	4	5	NA UO
m. Identify/search entrants?	0	1	2	3	4	5	NA UO
n. Establish personnel/vehicle search area?	0	1	2	3	4	5	NA UO
o. Employ Escalation of Force (EOF) measures (shout, show, shove, shoot to disable, shoot to kill/destroy)?	0	1	2	3	4	5	NA UO
p. Maintain appropriate respect of local people and customs?	0	1	2	3	4	5	NA UO
q. Conduct meeting(s)?	0	1	2	3	4	5	NA UO
r. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA UO
s. Execute Information Operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item <u>was</u> used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?								
					0	1	2	3	4	5	NA	UO	
Signs – deadly force, warning, EOF (for vehicles & cordon as necessary)					0	1	2	3	4	5	NA	UO	
Sirens					0	1	2	3	4	5	NA	UO	
Bullhorns					0	1	2	3	4	5	NA	UO	
Blinking lights					0	1	2	3	4	5	NA	UO	
Chem lights					0	1	2	3	4	5	NA	UO	
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO	
Taclite for weapons/M4					0	1	2	3	4	5	NA	UO	
Cones					0	1	2	3	4	5	NA	UO	
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO	
Concrete barriers					0	1	2	3	4	5	NA	UO	
Folding barricades					0	1	2	3	4	5	NA	UO	
Blocking barricades					0	1	2	3	4	5	NA	UO	
Speed bumps					0	1	2	3	4	5	NA	UO	
Spike strips					0	1	2	3	4	5	NA	UO	
Sandbags					0	1	2	3	4	5	NA	UO	
Speed ball (extra ammo, magazines, grenades, etc.)					0	1	2	3	4	5	NA	UO	
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO	
Litter/skidcos					0	1	2	3	4	5	NA	UO	
Wands (mirrored handles for looking under vehicles)					0	1	2	3	4	5	NA	UO	
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO	
Females to search females					0	1	2	3	4	5	NA	UO	
Metal detector					0	1	2	3	4	5	NA	UO	
Detainee kits*					0	1	2	3	4	5	NA	UO	
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO	
Xspray					0	1	2	3	4	5	NA	UO	
Interpreters/coordinate for additional interpreters					0	1	2	3	4	5	NA	UO	

* AWT – Air Weapons Team

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals



ARROYO CENTER

**Iraq Common Event Approaches
Indirect Fire (IF) on unit Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could</u> <u>be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T D O N E	S U F F I C I E N T	S O M E W H A T	M O D E R A T E	C O M P L E T E	S U P E R I O R	N A	U O
Common actions/reminders								
1. During preparation for execution and reporting, how well did the unit ...								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
2) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO
b. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA	UO
c. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO
d. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Seek/take cover?	0	1	2	3	4	5	NA	UO
b. Clear markings that identify bunkers/mortar barriers?	0	1	2	3	4	5	NA	UO
c. Get in mortar barriers?	0	1	2	3	4	5	NA	UO
d. Remain in safe positions until incoming rounds ceased landing?	0	1	2	3	4	5	NA	UO
e. Move to established rally point?	0	1	2	3	4	5	NA	UO
f. Assess casualties for urgency & assist/treat casualties (including local nationals [LNs])?	0	1	2	3	4	5	NA	UO
g. Construct Casualty Collection Point (CCP)/execute Mass Casualty (MASCAL) drill?	0	1	2	3	4	5	NA	UO
h. Begin casevac (ground/air as necessary)?	0	1	2	3	4	5	NA	UO
i. Alert higher medical (aid station/CSH) of incoming casualty situation?	0	1	2	3	4	5	NA	UO
j. Establish accountability of personnel?	0	1	2	3	4	5	NA	UO
k. Employ JSS/COP/FOB lockdown procedures?	0	1	2	3	4	5	NA	UO
l. Change/upgrade uniform policy to full kit (higher force protection level)?	0	1	2	3	4	5	NA	UO
m. Increase JSS/COP/FOB security?	0	1	2	3	4	5	NA	UO
n. Conduct crater analysis?	0	1	2	3	4	5	NA	UO
o. Confirm if counterfire radar acquired incoming round point of origin (POO)?	0	1	2	3	4	5	NA	UO
p. Conduct counterfire mission as necessary?	0	1	2	3	4	5	NA	UO
q. Reinforce vigilance of all guards/towers?	0	1	2	3	4	5	NA	UO
r. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA	UO
s. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
t. Execute Information Operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

* AWT – Air Weapons Team

* SSE kits – Kits with various unit designated items (e.g. rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis.

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1)	(2)	(3)	(4)	(5)							
	Equipment, Kit, Tools were listed on SOP or equipment lists	Equipment, Kit, Tools were available for use	Item should have been used to support tactical situation	Item <u>was</u> used to support tactical situation	How well did the unit use this item to influence the tactical situation?							
Alarms for JSS/COP/FOB notification					0	1	2	3	4	5	NA	UO
Sirens					0	1	2	3	4	5	NA	UO
Bullhorns					0	1	2	3	4	5	NA	UO
Concrete barriers					0	1	2	3	4	5	NA	UO
Sandbags					0	1	2	3	4	5	NA	UO
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO
Litter/skidcos					0	1	2	3	4	5	NA	UO



ARROYO CENTER

***Iraq Common Event Approaches - Hasty/
Deliberate (HD) Checkpoint Questionnaire***

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____
 Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission could be accomplished 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	NOT DONE	SUFFICIENT	SOMEWHAT	MODERATELY	COMPLETELY	SUPERIOR	NOT APPLICABLE	UNOBSERVED
Common actions/reminders								
1. During preparation for execution and reporting, how well did the unit ...								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
b. Conduct/verify PCC/PCI?	0	1	2	3	4	5	NA	UO
c. Assign jobs/teams to each soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA	UO
d. Conduct rock drills (internally & with local friendly forces)?	0	1	2	3	4	5	NA	UO
e. Conduct movement/convoy and withdrawal brief?	0	1	2	3	4	5	NA	UO
f. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO
g. Disseminate photos/description of BOLO*/high value targets?	0	1	2	3	4	5	NA	UO
h. Update/mark friendly/enemy and incident locations on FBCB2?	0	1	2	3	4	5	NA	UO
i. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO
j. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ... or did the unit ...								
a. Call & coordinate Local Army and Local Police involvement (brief late to avoid compromise)?	0	1	2	3	4	5	NA	UO
b. Secure both ends of checkpoint or bridge?	0	1	2	3	4	5	NA	UO
c. Secure area?	0	1	2	3	4	5	NA	UO
d. Set up serpentine to guard against suicide bombers?	0	1	2	3	4	5	NA	UO
e. Put vehicles in overwatch & roadblock positions (foot and vehicular traffic)?	0	1	2	3	4	5	NA	UO
f. Establish "trigger" lines" for non-compliance?	0	1	2	3	4	5	NA	UO
g. Provide overwatch with personnel?	0	1	2	3	4	5	NA	UO
h. Establish search area?	0	1	2	3	4	5	NA	UO
i. Identify search teams?	0	1	2	3	4	5	NA	UO
j. Establish search plan (all or random numbers)?	0	1	2	3	4	5	NA	UO
k. Employ Escalation of Force (EOF) measures (shout, show, shove, shoot to disable, shoot to kill/destroy)?	0	1	2	3	4	5	NA	UO
l. Conduct "vehicle" search drill?	0	1	2	3	4	5	NA	UO
m. Conduct personnel search drill?	0	1	2	3	4	5	NA	UO
n. Coordinate UAV overwatch?	0	1	2	3	4	5	NA	UO
o. Engage locals for intelligence?	0	1	2	3	4	5	NA	UO
p. Detain and/or arrest individuals as necessary?	0	1	2	3	4	5	NA	UO
q. Move suspects to safe/secure area for tactical questioning?	0	1	2	3	4	5	NA	UO
r. Request Tactical HUMINT Team (THT) or interrogators?				Yes			No	
s. Have Tactical HUMINT Team (THT) or interrogators available?				Yes			No	
t. Employ Tactical HUMINT Team (THT) or interrogators?	0	1	2	3	4	5	NA	UO
u. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA	UO
v. Continue the mission?	0	1	2	3	4	5	NA	UO
w. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
x. Execute information operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item was used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?							
					0	1	2	3	4	5	NA	UO
Signs – deadly force, warning, EOF (for vehicles & cordon)					0	1	2	3	4	5	NA	UO
Sirens					0	1	2	3	4	5	NA	UO
Bullhorns					0	1	2	3	4	5	NA	UO
Blinking lights					0	1	2	3	4	5	NA	UO
Chem lights					0	1	2	3	4	5	NA	UO
Flares					0	1	2	3	4	5	NA	UO
Signal devices					0	1	2	3	4	5	NA	UO
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO
Taclite on weapons/M4					0	1	2	3	4	5	NA	UO
VS17 panels					0	1	2	3	4	5	NA	UO
Engineer tape					0	1	2	3	4	5	NA	UO
Cones					0	1	2	3	4	5	NA	UO
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO
Concrete barriers					0	1	2	3	4	5	NA	UO
Folding barricades					0	1	2	3	4	5	NA	UO
Blocking barricades					0	1	2	3	4	5	NA	UO
Speed bumps					0	1	2	3	4	5	NA	UO
Spike strips					0	1	2	3	4	5	NA	UO
Sandbags					0	1	2	3	4	5	NA	UO
Speedball (extra ammo, magazines, grenades, etc.)					0	1	2	3	4	5	NA	UO
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO
Litter/skidcos					0	1	2	3	4	5	NA	UO
Helmet cameras					0	1	2	3	4	5	NA	UO
Wands (mirrored handles for looking under vehicles)					0	1	2	3	4	5	NA	UO
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO
Females available to search females					0	1	2	3	4	5	NA	UO
Metal detector					0	1	2	3	4	5	NA	UO
Detainee kits*					0	1	2	3	4	5	NA	UO
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO
Xspray					0	1	2	3	4	5	NA	UO
Interpreter					0	1	2	3	4	5	NA	UO

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis



ARROYO CENTER

**Iraq Common Event Approaches
Dismounted Patrol (DP)
takes sniper/SAF Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could</u> <u>be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T	S U F F I C I E N T	M O D E R A T E L Y	C O M P L E T E	S U P E R I O R	N A	U O
Common actions/reminders							
1. During preparation for execution and reporting, how well did the unit ...							
a. Report the following to higher and adjacent ...							
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA UO
2) 9-line medevac as needed?	0	1	2	3	4	5	NA UO
b. Assign jobs/teams to each soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA UO
c. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA UO
d. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA UO
e. Call and update squads/platoons/convoy?	0	1	2	3	4	5	NA UO
f. Post all reports (9-line & others) in vehicles?	0	1	2	3	4	5	NA UO
g. Prepare PAO/IO release?	0	1	2	3	4	5	NA UO
Event execution checklist							
2. During event execution, how well did the unit ...							
a. React to sniper contact?	0	1	2	3	4	5	NA UO
b. Seek cover?	0	1	2	3	4	5	NA UO
c. Assess casualties for urgency & assist/treat as necessary?	0	1	2	3	4	5	NA UO
d. Engage/suppress enemy fire?	0	1	2	3	4	5	NA UO
e. Secure area?	0	1	2	3	4	5	NA UO
f. Cordon area?	0	1	2	3	4	5	NA UO
g. Begin casevac/medevac procedures (ground/air as situation dictates)?	0	1	2	3	4	5	NA UO
h. Alert/clear locals?	0	1	2	3	4	5	NA UO
i. Shield dismounts/casualty with vehicles?	0	1	2	3	4	5	NA UO
j. Maneuver vehicles to facilitate casevac, exfiltration, or assault?	0	1	2	3	4	5	NA UO
k. Identify 3D's (distance, direction, description) of gun fire?	0	1	2	3	4	5	NA UO
l. Determine source of gun fire (shooter & location)?	0	1	2	3	4	5	NA UO
m. Mark on FBCB2?	0	1	2	3	4	5	NA UO
n. Request/coordinate air weapons team/UAV?	0	1	2	3	4	5	NA UO
o. Request QRF/backup?	0	1	2	3	4	5	NA UO
p. Search teams designated?	0	1	2	3	4	5	NA UO
q. Building/structure/room search and/or clear as necessary?	0	1	2	3	4	5	NA UO
r. Engage locals for intelligence?	0	1	2	3	4	5	NA UO
s. Execute squad/platoon movement and/or attack?	0	1	2	3	4	5	NA UO
t. Continue mission/break contact?	0	1	2	3	4	5	NA UO
u. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA UO
v. Provide detailed/complete IED/event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA UO
w. Execute information operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item <u>was</u> used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?							
					0	1	2	3	4	5	NA	UO
Signs – deadly force, warning, EOF (for vehicles & cordon)					0	1	2	3	4	5	NA	UO
Bullhorns					0	1	2	3	4	5	NA	UO
Blinking lights					0	1	2	3	4	5	NA	UO
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO
"Hoolie tools*" for breaking/entering/repairing doors, locks, windows					0	1	2	3	4	5	NA	UO
Extra locks to replace cut ones					0	1	2	3	4	5	NA	UO
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO
CLS bags (stocked)					0	1	2	3	4	5	NA	UO
Litter/skidcos					0	1	2	3	4	5	NA	UO
Countermeasure smoke for concealment					0	1	2	3	4	5	NA	UO
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO
Detainee kits*					0	1	2	3	4	5	NA	UO
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO
Interpreter					0	1	2	3	4	5	NA	UO

* AWT – Air Weapons Team

* Hoolie tools – kit with various unit designated tools (e.g., crow bars, wrenches, pliers, hammers) used to force open windows, doors, fences, walls, or floors during searches

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xsray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis



**Iraq Common Event Approaches
Cordon & Search (CS) Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____

Unit _____ Rotation _____ Battalion Mission _____

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	DO	DI	SO	MO	CO	SU	AP	UN
	NE	C	ME	DE	MP	PE	PL	OB
		IE	W	R	L	R	I	S
			H	A	E	I	C	E
			A	T	T	O	A	R
			T	E	E	R	B	V
							L	E
								D
Common actions/reminders								
1. During preparation for execution and reporting, how well did the unit								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?	0	1	2	3	4	5	NA	UO
2) 9-line medevac as needed?	0	1	2	3	4	5	NA	UO
b. Conduct rock drills (internally & with Local friendly forces)?	0	1	2	3	4	5	NA	UO
c. Conduct rehearsals (internally & with Local friendly forces)?	0	1	2	3	4	5	NA	UO
d. Brief movement, convoy, and withdrawal?	0	1	2	3	4	5	NA	UO
e. Brief Rules of Engagement (ROE)?	0	1	2	3	4	5	NA	UO
f. Disseminate photos/description of BOLO*/high value targets?	0	1	2	3	4	5	NA	UO
g. Request air support (AWT*/UAV)?	0	1	2	3	4	5	NA	UO
h. Call & update squads/platoons/convoy?	0	1	2	3	4	5	NA	UO
i. Assign jobs/teams to each soldier (e.g., security, breach, litter)?	0	1	2	3	4	5	NA	UO
j. Prepare PAO/IO release?	0	1	2	3	4	5	NA	UO
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Call & coordinate Local Army & Local Police involvement (brief specifics late to avoid compromise)?	0	1	2	3	4	5	NA	UO
b. Conduct recon (map/driving) with informant as available?	0	1	2	3	4	5	NA	UO
c. Establish (by recon) cordon/search area and withdrawal plan?	0	1	2	3	4	5	NA	UO
d. Search teams identified/designated?	0	1	2	3	4	5	NA	UO
e. Secure area/site?	0	1	2	3	4	5	NA	UO
f. Cordon area?	0	1	2	3	4	5	NA	UO
g. Put vehicles in overwatch & roadblock (foot and vehicular traffic)?	0	1	2	3	4	5	NA	UO
h. Maneuver vehicles to facilitate support to casevac, exfiltration, or assault?	0	1	2	3	4	5	NA	UO
i. Establish dismounted security?	0	1	2	3	4	5	NA	UO
j. Establish overwatch (snipers/marksmen)?	0	1	2	3	4	5	NA	UO
k. Coordinate UAV overwatch?	0	1	2	3	4	5	NA	UO
l. Search houses within cordon including informant's house?	0	1	2	3	4	5	NA	UO
m. Conduct building/structure/room search & clear operations as necessary?	0	1	2	3	4	5	NA	UO
n. Employ helmet cameras?	0	1	2	3	4	5	NA	UO
o. Confiscate contraband?	0	1	2	3	4	5	NA	UO
p. Engage locals for intelligence?	0	1	2	3	4	5	NA	UO
q. Detain and/or arrest as necessary?	0	1	2	3	4	5	NA	UO
r. Move suspects to safe/secure area for tactical questioning?	0	1	2	3	4	5	NA	UO
s. Request Tactical HUMINT Team (THT) or interrogators?							Yes	No
t. Have Tactical HUMINT Team (THT) or interrogators available?							Yes	No
u. Employ Tactical HUMINT Team (THT) or interrogators?	0	1	2	3	4	5	NA	UO
v. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering)?	0	1	2	3	4	5	NA	UO
w. Continue mission?	0	1	2	3	4	5	NA	UO
x. Provide detailed/complete event report to S2 staff upon return to FOB?	0	1	2	3	4	5	NA	UO
y. Execute Information Operations (IO) actions to support/exploit?	0	1	2	3	4	5	NA	UO

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used. (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item <u>was</u> used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?							
					0	1	2	3	4	5	NA	UO
Signs – deadly force, warning, EOF (for vehicles & cordon as necessary)					0	1	2	3	4	5	NA	UO
Sirens					0	1	2	3	4	5	NA	UO
Bullhorns					0	1	2	3	4	5	NA	UO
Blinking lights					0	1	2	3	4	5	NA	UO
Visible lasers (for C2 at night)					0	1	2	3	4	5	NA	UO
Cones					0	1	2	3	4	5	NA	UO
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO
Folding barricades					0	1	2	3	4	5	NA	UO
"Hoolie tools** for breaking/entering/repairing doors, locks, windows					0	1	2	3	4	5	NA	UO
Demolitions					0	1	2	3	4	5	NA	UO
Gate stickers to mark cleared houses					0	1	2	3	4	5	NA	UO
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO
Litter/skidcos					0	1	2	3	4	5	NA	UO
Non-lethal intervention weapons					0	1	2	3	4	5	NA	UO
Police dogs					0	1	2	3	4	5	NA	UO
Metal detector					0	1	2	3	4	5	NA	UO
Detainee kits*					0	1	2	3	4	5	NA	UO
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO
Xspray					0	1	2	3	4	5	NA	UO
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO
Informant disguises/uniform/mask					0	1	2	3	4	5	NA	UO
Interpreter					0	1	2	3	4	5	NA	UO

* AWT – Air Weapons Team

* BOLO – be on the lookout for (photo/description of individual or vehicle to watch for)

* Detainee kits – Kits with unit designated items (e.g. blindfolds, detainee forms, Xspray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g. rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis



**Iraq Common Event Approaches
Conduct Consequence Management
Operations (CM) Questionnaire**

Check if STX/Lanes

O/C call sign _____ # of rotations with this call sign _____ Training day _____
Unit _____ Rotation _____ Battalion Mission _____

Score each activity below by how sufficiently it was done. 0 = NOT DONE – BUT should have been 1 = NOT SUFFICIENT 2 = SOMEWHAT SUFFICIENT 3 = MODERATELY SUFFICIENT 4 = COMPLETELY SUFFICIENT - the action or activity was complete, AND timely enough so that assigned tasks and/or mission <u>could be accomplished</u> 5 = SUPERIOR NA = NOT APPLICABLE (not required, no reason to execute) UO = UNOBSERVED BY OC	N O T D O N E	S U F F I C I E N T	S O M E W H A T	M O D E R A T E L Y	C O M P L E T E	S U P E R I O R	N A P P L I C A B L E	U N O B S E R V E D
Common actions/reminders								
1. During preparation for execution and reporting, how well did the unit								
a. Report the following to higher and adjacent ...								
1) sitrep, status, and/or contact?								
2) 9-line medevac as needed?								
b. Conduct PCC/PCI?								
c. Assign jobs/teams to each Soldier (e.g., security, breach, litter)?								
d. Brief Rules of Engagement (ROE)?								
e. Call & update squads/platoons/convoy?								
f. Prepare PAO/IO release?								
Event execution checklist								
2. During event execution, how well did the unit ...								
a. Call/coordinate Civil Affairs (CA) & Tactical Psyops Team (TPT) support?								
b. Call & coordinate Local Army & Local Police involvement?								
c. Secure area/site?								
d. Cordon area?								
e. Isolate with vehicles?								
f. Put vehicles in overwatch & roadblock positions (foot & vehicular traffic)?								
g. Maneuver vehicles to facilitate casevac, exfiltration, or assault?								
h. Assess & assist casualties?								
i. Treat Local National (LN) casualties?								
j. Begin casevac?								
k. Engage locals for intelligence?								
l. Detain and/or arrest as necessary?								
m. Move suspects to safe/secure area for tactical questioning?								
n. Request Tactical HUMINT Team (THT) or interrogators?								
o. Have Tactical HUMINT Team (THT) or interrogators available?								
p. Employ Tactical HUMINT Team (THT) or interrogators?								
q. Maintain appropriate respect of local people and customs?								
r. Pay for terrorist damage?								
s. Coordinate with higher for Law Enforcement Program (LEP) team to conduct SSE* (forensics/evidence gathering) as necessary?								
t. Use TPT to highlight damage?								
u. Provide detailed/complete event report to S2 staff upon return to FOB?								
v. Execute Information Operations (IO) actions to support/exploit?								

Key Equipment, Kits, and Tools (EKT) to Facilitate Operations. Place an X in each appropriate box to show whether EKT items were (1) on the SOP, (2) available for use, (3) necessary for use based upon tactical situation, (4) used, (5) Then identify, according to the scale above, how well the unit used this item to influence the tactical situation.	(1) Equipment, Kit, Tools were listed on SOP or equipment lists	(2) Equipment, Kit, Tools were available for use	(3) Item should have been used to support tactical situation	(4) Item <u>was</u> used to support tactical situation	(5) How well did the unit use this item to influence the tactical situation?									
					0	1	2	3	4	5	NA	UO		
Signs – deadly force, warning, EOF (for vehicles & cordon as necessary)					0	1	2	3	4	5	NA	UO		
Bullhorns					0	1	2	3	4	5	NA	UO		
Cones					0	1	2	3	4	5	NA	UO		
Concertina wire (pickets, pounder, wire gloves)					0	1	2	3	4	5	NA	UO		
Spike strips					0	1	2	3	4	5	NA	UO		
Body bags					0	1	2	3	4	5	NA	UO		
First aid kits/extra supplies/medball					0	1	2	3	4	5	NA	UO		
Litter/skidcos					0	1	2	3	4	5	NA	UO		
Wands (mirrored handles for looking under vehicles)					0	1	2	3	4	5	NA	UO		
Detainee kits*					0	1	2	3	4	5	NA	UO		
Hand cuff straps/zip ties					0	1	2	3	4	5	NA	UO		
Digital camera					0	1	2	3	4	5	NA	UO		
Xsray					0	1	2	3	4	5	NA	UO		
Sensitive site exploitation kits (SSE)*					0	1	2	3	4	5	NA	UO		
Interpreter					0	1	2	3	4	5	NA	UO		
Reference card local government names and phone numbers					0	1	2	3	4	5	NA	UO		

* Detainee kits – Kits with unit designated items (e.g., blindfolds, detainee forms, Xsray, digital cameras, zip ties) used in capturing, questioning, processing, transporting, and incarcerating individuals

* SSE kits – Kits with various unit designated items (e.g., rubber gloves, evidence bags, finger print capabilities, video cameras/recording devices) used to facilitate evidence collection and forensic analysis

K. IRAQ COMMON EVENTS APPROACHES HANDBOOK VARIABLE LIST

**Table K.1
Iraq Common Events Approaches Handbook Variable List**

Variable Name	Definition	Data
SITE	Location of training/assessment	0 = JRTC; 1 = NTC
F_form	Iraq common events	300=PIED, 301=QRF, 302=DP, 303=ROE, 304=HD, 305=IF, 306=CS, 307=RD, 308=MS, 309=CM
STX	Situational Training Exercise - Controlled training experience usually held within first six days of CTC rotation where training is limited to specific stimuli (no other events going on to maximize learning)	1 = STX lanes; 0 = force on force (unregulated/restricted training)
OC	Observer controller - call sign	alpha numeric code
EXPER	Number of rotations (month-long training exercises the OC has assessed)	0 - 36
exp4	OC experience - OCs with 4 or more rotations	1 = four or more rotations; 0 = <4 rotations
TD	The training day that the specific Iraq event was assessed	TD1 = 1st day of training, TD14 = last day of training
PLT	Platoon designation	0=none designated, 1=1st, 2=2nd, 3=3rd, 4=4th, 5=Scout/Recon, 6=Hq, 7=Mortars, 8=MGS, 9=Medical
CO	Company designation	0=HHC, 1=A Co, 2=B Co, 3=C Co, 4=D Co, 5=E Co, 6=FSC
BN	Battalion designation	protected
Unit	Platoon/Company/Battalion	protected
unitcode	five digit code to identify units BDE/BN/CO/PLT A/BB/C/D	BDE=protected, BN=protected; 0=HHC, 1=A Co, 2=B Co, 3=C Co, 4=D Co, 5=E Co, 6=FSC; 0=none designated, 1=1st, 2=2nd, 3=3rd, 4=4th, 5=Scout/Recon, 6=Hq, 7=Mortars, 8=MGS, 9=Medical;
Manbn	Unit is a maneuver (combat) battalion	1=yes, 0=no
manco	Unit is a maneuver (combat) company	1=yes, 0=no
manplt	Unit is a maneuver (combat) platoon	1=yes, 0=no
Treatment	Unit received Iraq Common Event Approaches Handbook	1=yes, 0=no
Rot 08	Unit conducted rotation to CTC (0808)	1=yes, 0=no
Rot 10	Unit conducted rotation to CTC (0810)	1=yes, 0=no
Rot 01	Unit conducted rotation to CTC (0901)	1=yes, 0=no
Rot 02	Unit conducted rotation to CTC (0902)	1=yes, 0=no
Rot 04	Unit conducted rotation to CTC (0904)	1=yes, 0=no
Rot 05	Unit conducted rotation to CTC (0905)	1=yes, 0=no
Rot 06	Unit conducted rotation to CTC (0906)	1=yes, 0=no
Ac	Common actions/reminders assessed for each scenario	0=not done - 5=superior, N/A, UO (unobserved)
Ev	Events assessed specific to each scenario	0=not done - 5=superior, N/A, UO (unobserved)
EQ	Equipment assessed specific to each scenario (5 questions) (1) Equipment listed on SOP (2) Equipment available for use (3) (3) Equipmen	(1) Listed on SOP 1=yes, 0=no; (2) Available for use 1=yes, 0=no; (3) Item should have been used 1=yes, 0=no; (4) Item was used 1=yes, 0=no;
avgtotscr	Average Total Score	0-5
avgacscr	Average Actions Score - includes common actions/reminders	0-5
avgevscr	Average Event Score - includes only event scores	0-5
avgeqscr	Average Equipment Score - includes only equipment scores	0-5
avgacevscr	Average Actions/Equipment Score - includes actions and equipment	0-5

L. HUNDREDTH HOUSE TOOLS USAGE DATA ANALYSIS

**Figure L.1
Hundredth House Tools Usage Data Analysis**

Q1b Use STRKNET * Q4a seen handbook Crosstabulation

Count	Treat	Q4a seen handbook		Total			
		0	1				
	0 Q1b Use STRKNET	0	520	17	537		
		1	35	3	38	6.31%	15.00%
	Total		555	20	575		3.60% control saw handbook
	1 Q1b Use STRKNET	0	2142	383	2525		4.16% no handbook, use Strykernet
		1	93	131	224	4.16%	25.49% handbook, use Strykernet
	Total		2235	514	2749		23.00% treatment saw handbook

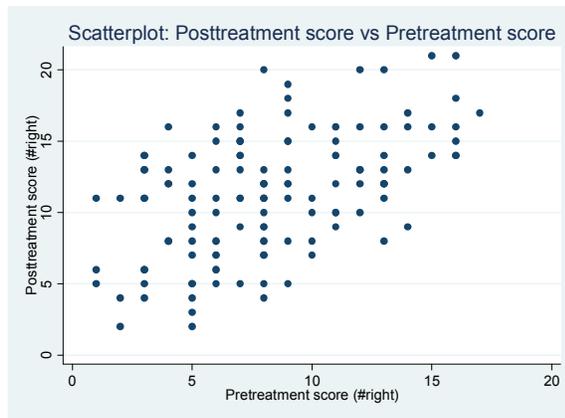
Q1a vist STRKNET * Q4a seen handbook Crosstabulation

Count	Treat	Q4a seen handbook		Total			
		0	1				
	0 Q1a vist STRKNET	0	484	14	498		
		1	72	6	78	12.95%	30.00%
	Total		556	20	576		
	1 Q1a vist STRKNET	0	1980	300	2280		
		1	254	214	468	11.37%	41.63%
	Total		2234	514	2748		

M. HUNDREDTH HOUSE REGRESSION INFLUENTIAL POINT AND OTHER THREATS TO STATISTICAL VALIDITY ANALYSES

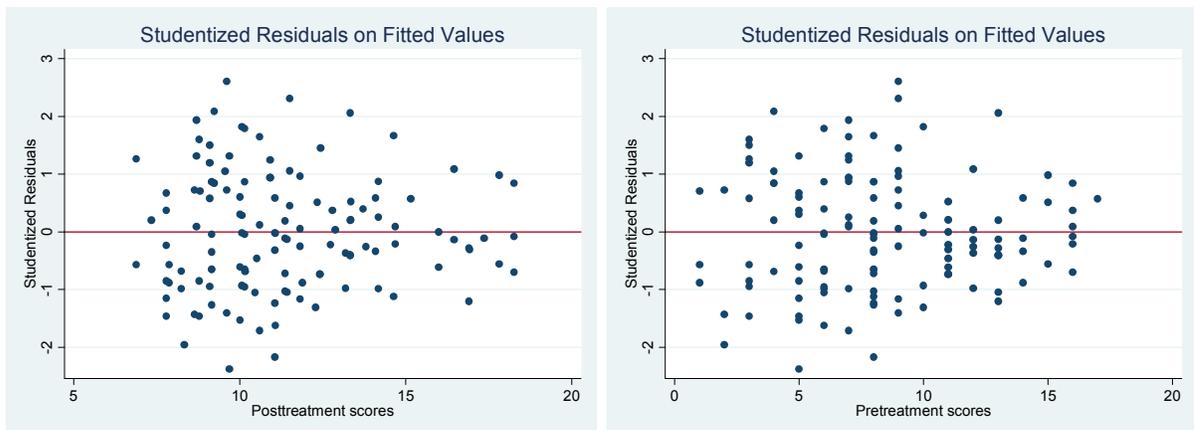
We conducted standard outlier analysis on the model starting with the global properties of the model to check for linearity and constant variance. We first reviewed a scatterplot of post-treatment scores versus pre-treatment scores to confirm linearity. The model observations depict a positive, linear relationship as shown in Figure M.1.

Figure M.1
Hundredth House Scatterplot: Posttreatment versus pretreatment scores



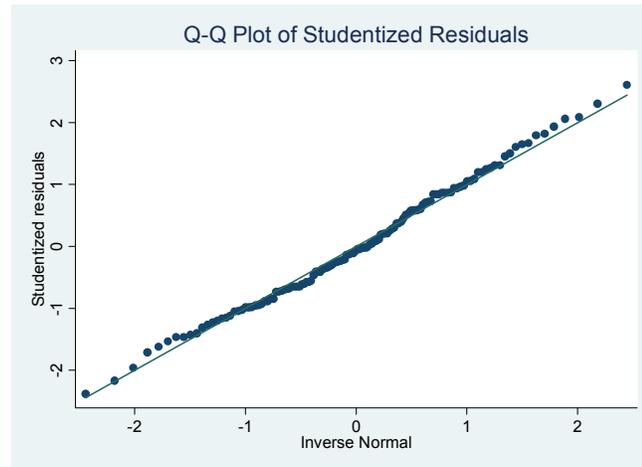
The review of studentized residuals on both the post-treatment and the pre-treatment scores were also unremarkable with no patterns in the residuals and values generally ranging from -2 to +2.

Figure M.2
Studentized Residuals on Posttreatment and Pretreatment Scores: 130 Observation Model



This was also the case for the QQ plot of the studentized residuals plotting the inverse normal against the studentized residuals.

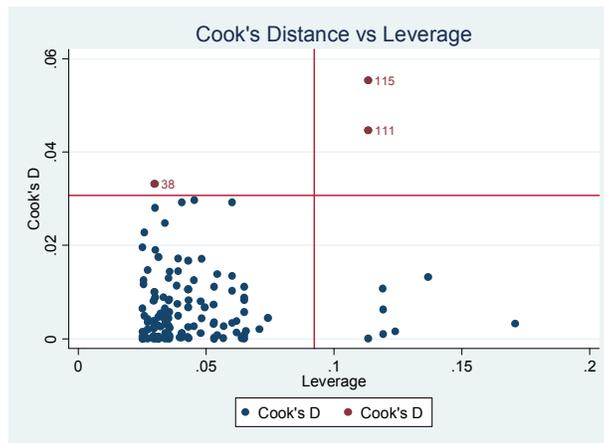
Figure M.3
Studentized Residuals on Inverse Normal “QQ” Plot



We then conducted case-specific diagnostics to assess whether any individual observations were exerting undue leverage or influence on the model. These potential influential point observations could be the result of improper measurement or improper data collection. Additionally, they could simply be values that are so different from the remaining observation values that they materially affect the regression coefficients. Any observations that meet these criteria should be assessed to determine if their inclusion would result in the accepted model not accurately reflecting the true model relationships.

To assess case-specific diagnostics, we used accepted methods including leverage, Cook’s distance, and DFbeta. For the leverage threshold, we used $\frac{2*P}{N} = \frac{2*6}{130} = .0923$ where 2 is a constant, P is the number of predictors including the intercept, and N is the number of observations. For the Cook’s distance threshold, we used $\frac{4}{N} = \frac{4}{130} = .0308$. Cook’s distance measures the influence associated with deleting an observation on the rest of the sample. By plotting Cook’s distance versus leverage, we identified three observations that exceeded the influence threshold and seven observations that exceeded the leverage threshold. The influential observations are the concern. The plot of results showing three influential points is shown in Figure M.4.

Figure M.4
Cook’s Distance Plotted Against Leverage



We continued the influence analysis by evaluating DFBeta for each of the selected variables. This analysis provides insight into the change in the regression coefficients and dependent variables associated with each of the observations. The DFBeta plots for each of the five variables [ranknco], [rankoff], [depoldev], [inter], and [prtot] that depict an additional eight unique influential points are shown in Figures M.5 to K.7.

Figure M.5
DFBeta for Ranknco and Rankoff Variables

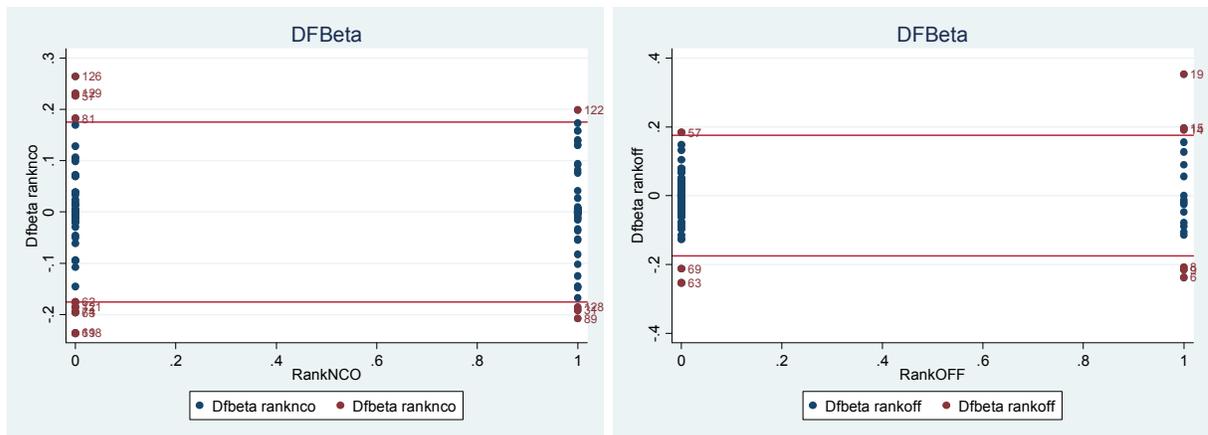


Figure M.6
DFbeta for Depoldev and Interaction Variables

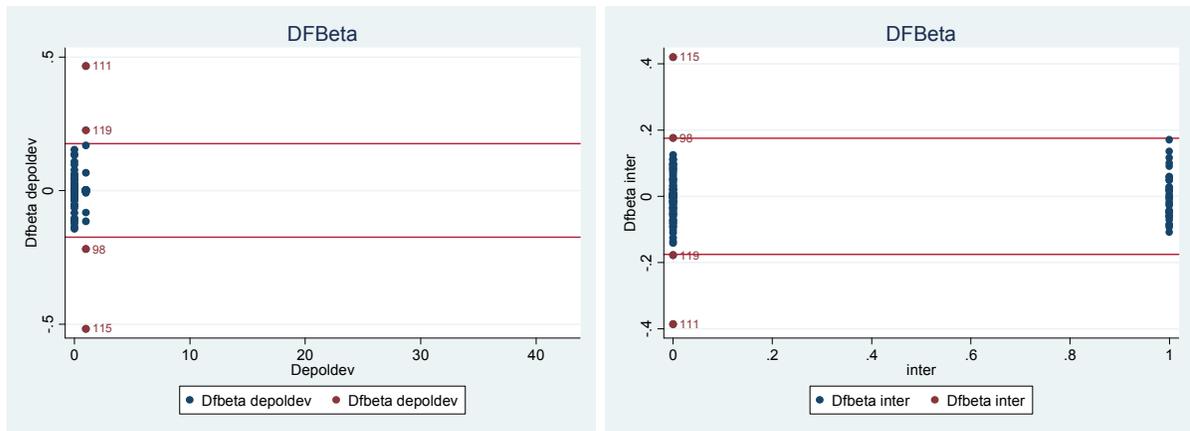
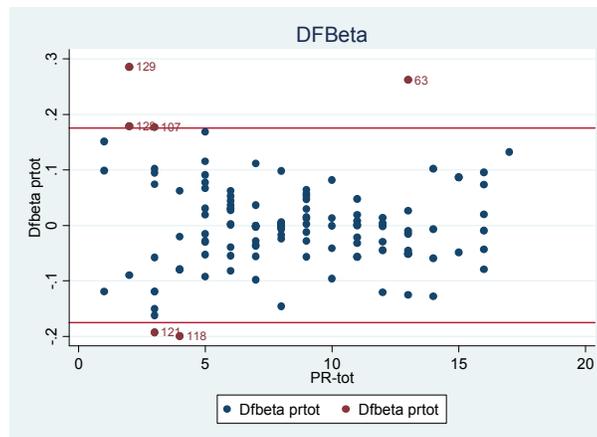


Figure M.7
DFbeta for Prtot Variable



We then conducted a review of the data collection, test scoring, and data transcription methods to assess whether there were any identifiable errors or inconsistencies that might invalidate any observations. We found no such occurrences, but decided to conduct a complete influential point analysis to determine the impact of these influential points on the regression coefficients if they were included in the final model.

We then deleted the most egregious influence point violators starting with the violators of the composite Cook's distance. We deleted observations 115, 111, and 38. The global and case-specific diagnostics for the 127 remaining observations are shown in Figures M.8 – M.13.

Figure M.8
Studentized Residuals on Posttreatment and Pretreatment Scores: 127 Observation Model (observations 115, 111, 38 deleted)

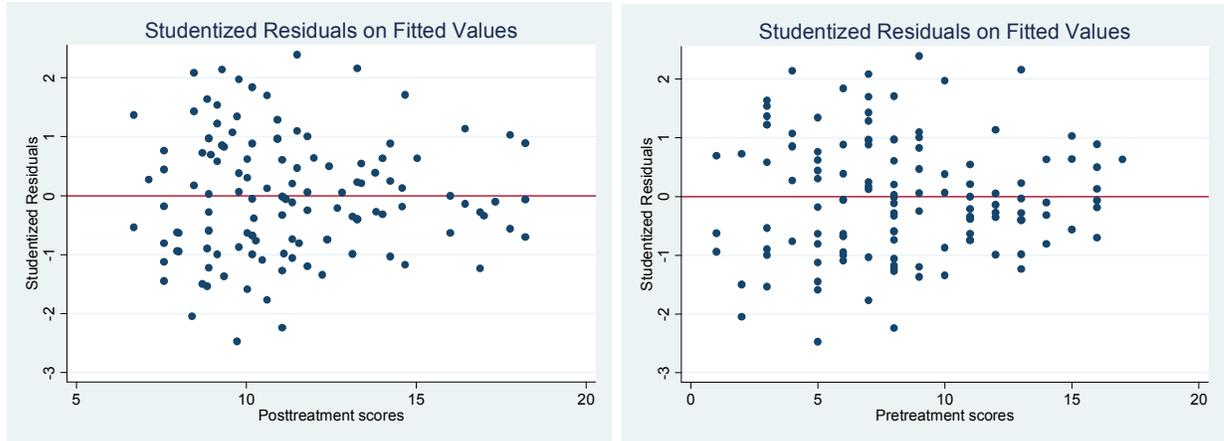


Figure M.9
Studentized Residuals on Inverse Normal "QQ" Plot (127 observations)

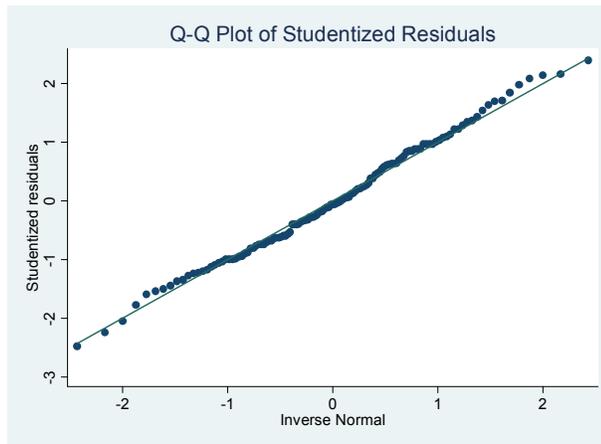


Figure M.10
Cook's Distance Plotted Against Leverage (127 observations)

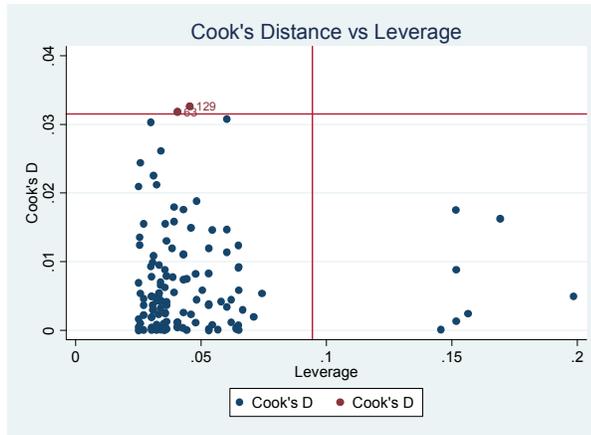


Figure M.11
DFbeta for Ranknco and Rankoff Variables (127 observations)

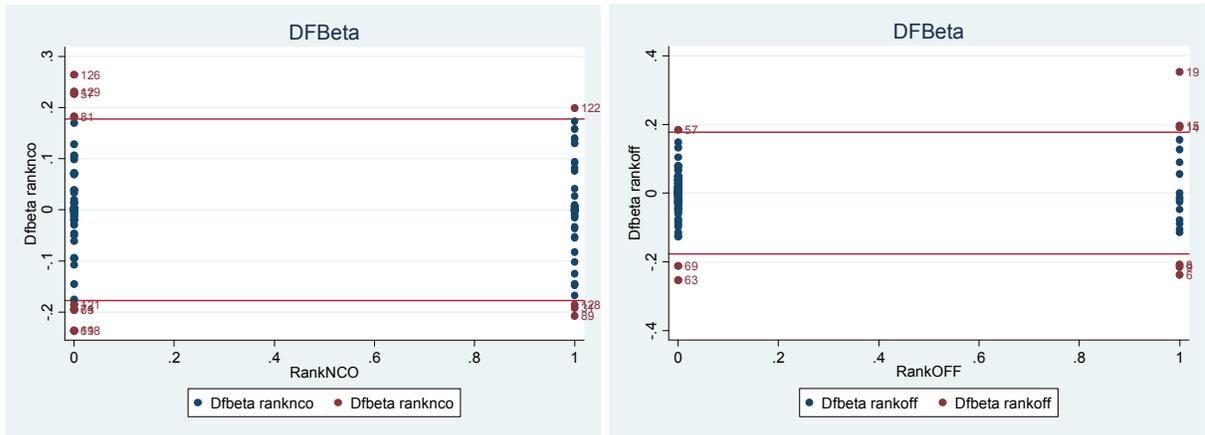


Figure M.12
DFbeta for Depoldev and InterVariables (127 observations)

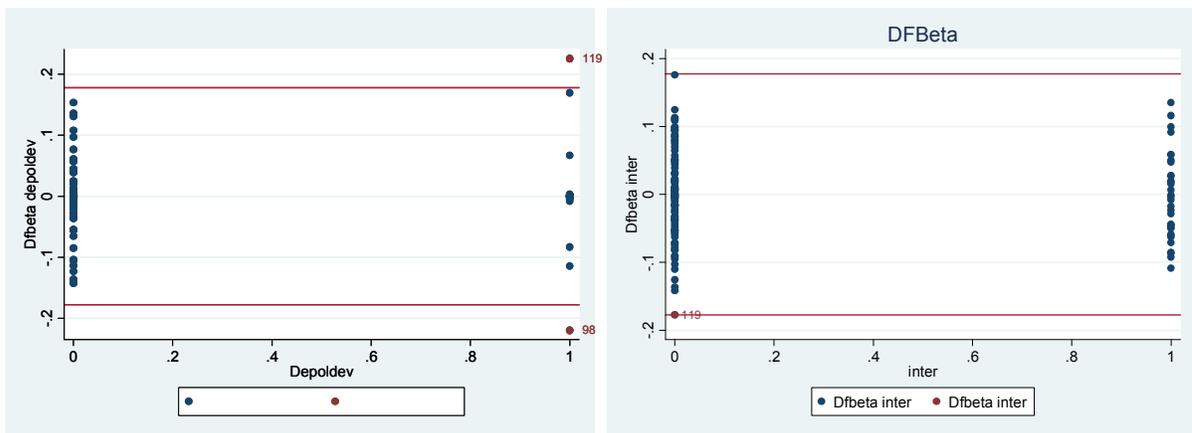
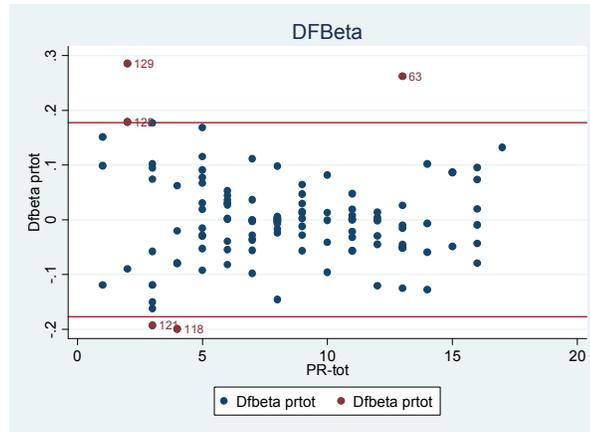


Figure M.13
DFbeta for Prtot Variable (127 observations)



We then dropped the next five most egregious influence point violators. We deleted observations 129, 126, 69, 63, and 19. The global and case-specific diagnostics for the 122 remaining observations are shown in Figure M.14 – M.19.

Figure M.14
Studentized Residuals on Posttreatment and Pretreatment Scores: 122 Observation Model (observations 129, 126, 69, 63, 19 deleted)

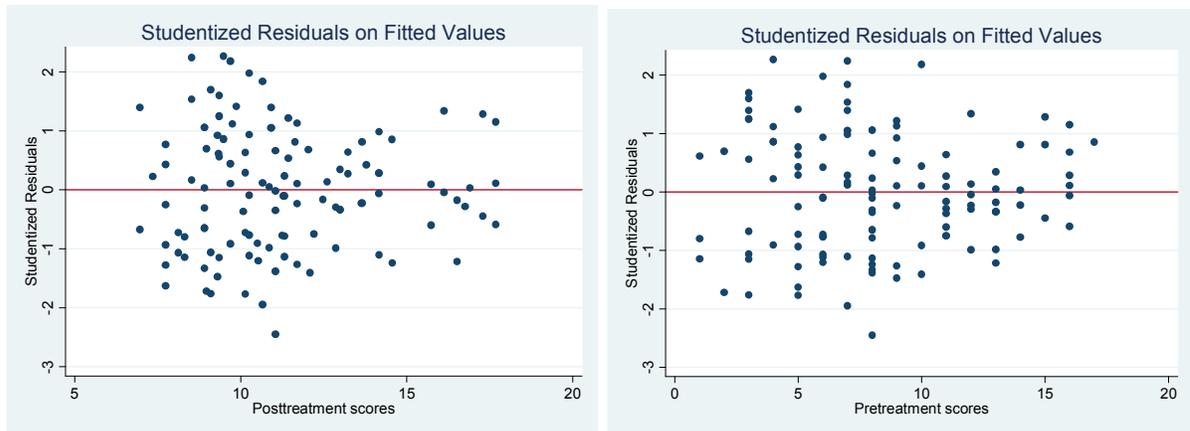


Figure M.15
Studentized Residuals on Inverse Normal “QQ” Plot (122 observations)

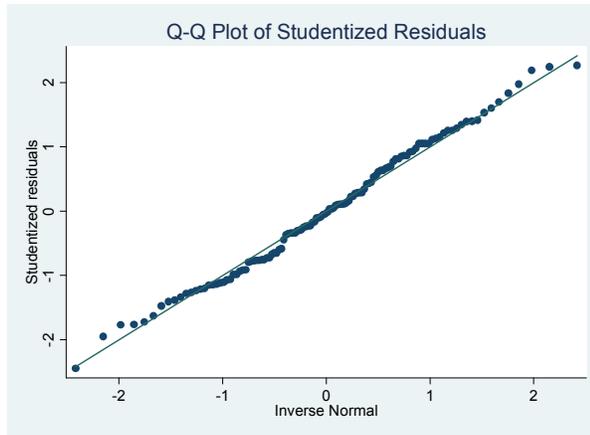


Figure M.16
Cook's Distance Plotted Against Leverage (122 observations)

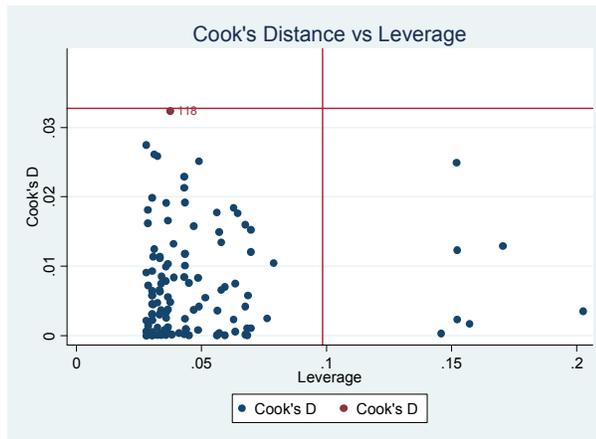


Figure M.17
DFbeta for Ranknco and Rankoff Variables (122 observations)

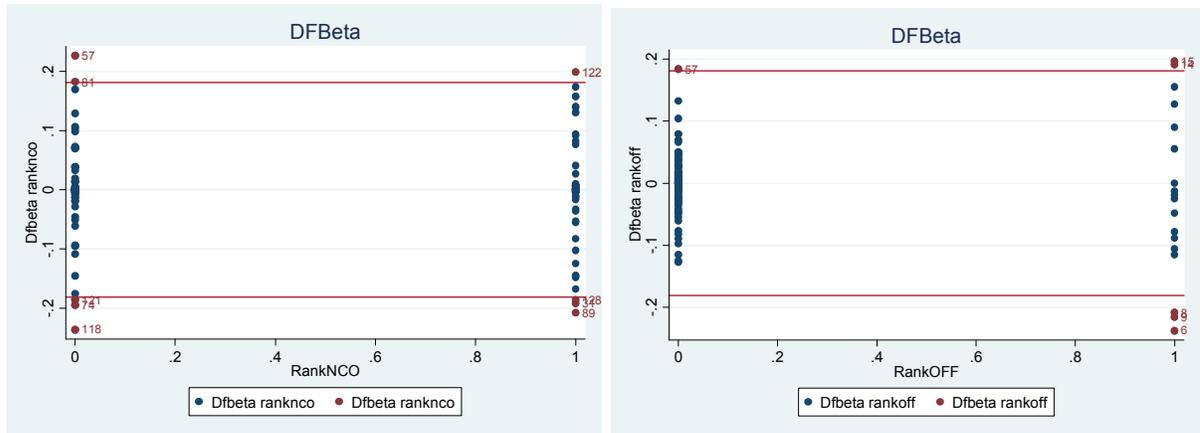


Figure M.18
DFbeta for Depoldev and InterVariables (122 observations)

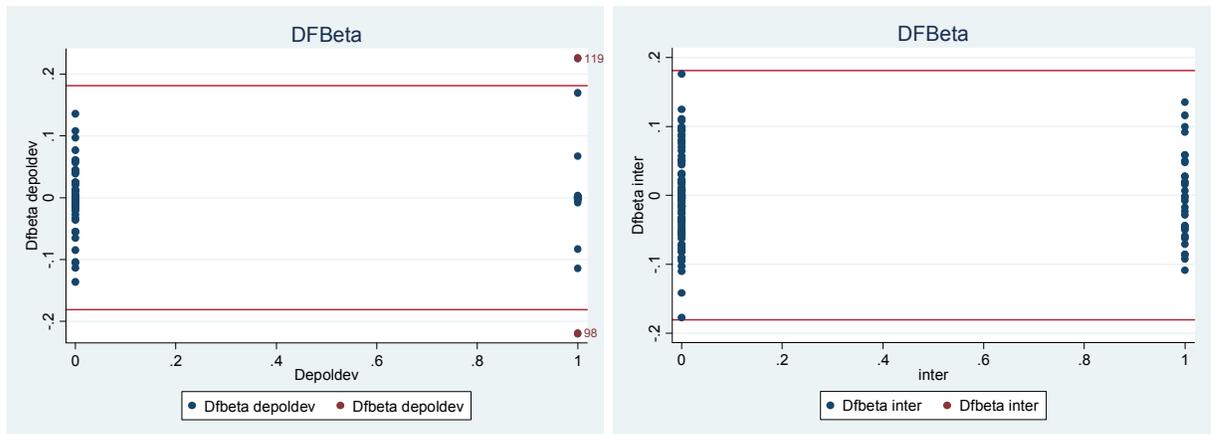
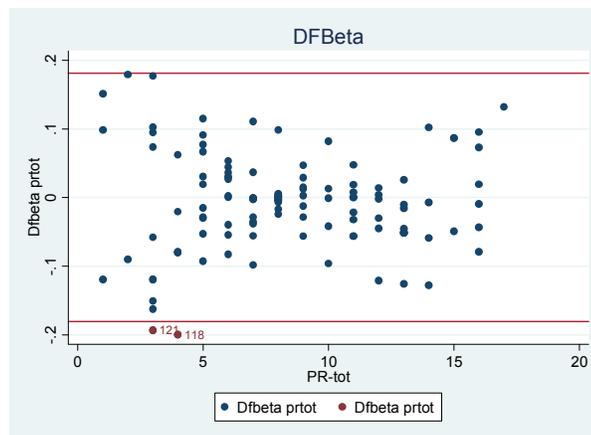


Figure M.19
DFbeta for Prtot Variable (122 observations)



I then dropped observations 118 and 57 followed by 6. The global and case-specific diagnostics for these two models are shown in Figures M.20 – M31.

Figure M.20
Studentized Residuals on Posttreatment and Pretreatment Scores: 120 Observation Model (observations 118 and 57 deleted)

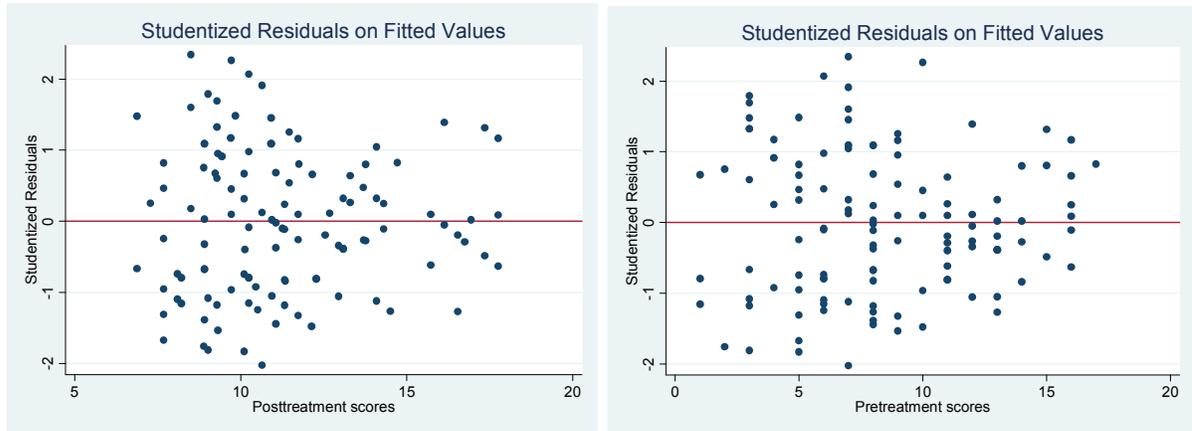


Figure M.21
Studentized Residuals on Inverse Normal “QQ” Plot (120 observations)

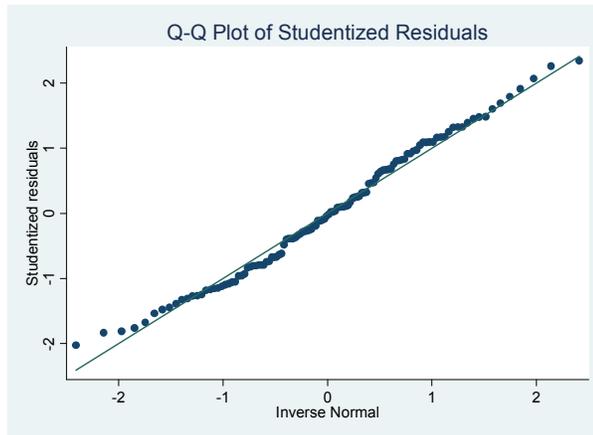


Figure M.22
Cook's Distance Plotted Against Leverage (120 observations)

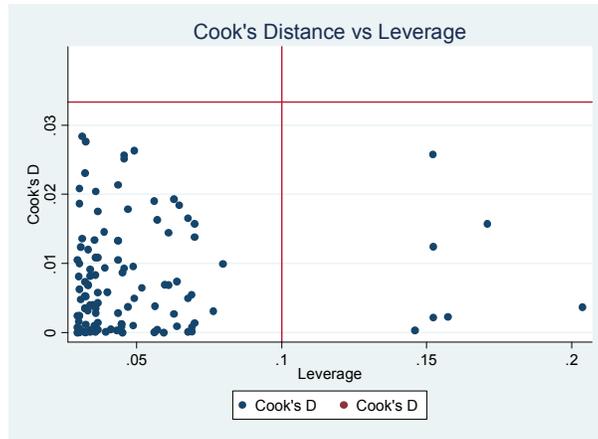


Figure M.23
DFbeta for Ranknco and Rankoff Variables (120 observations)

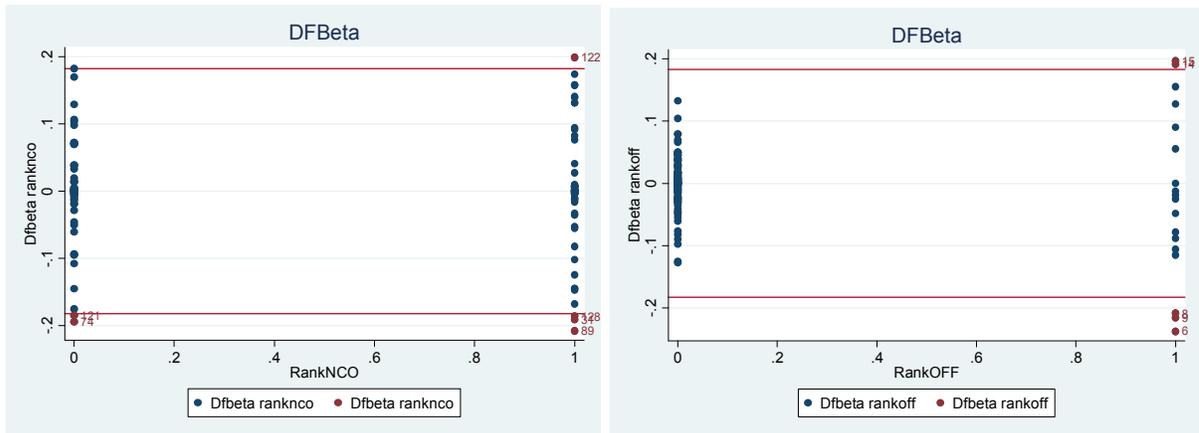


Figure M.24
DFbeta for Depoldev and InterVariables (120 observations)

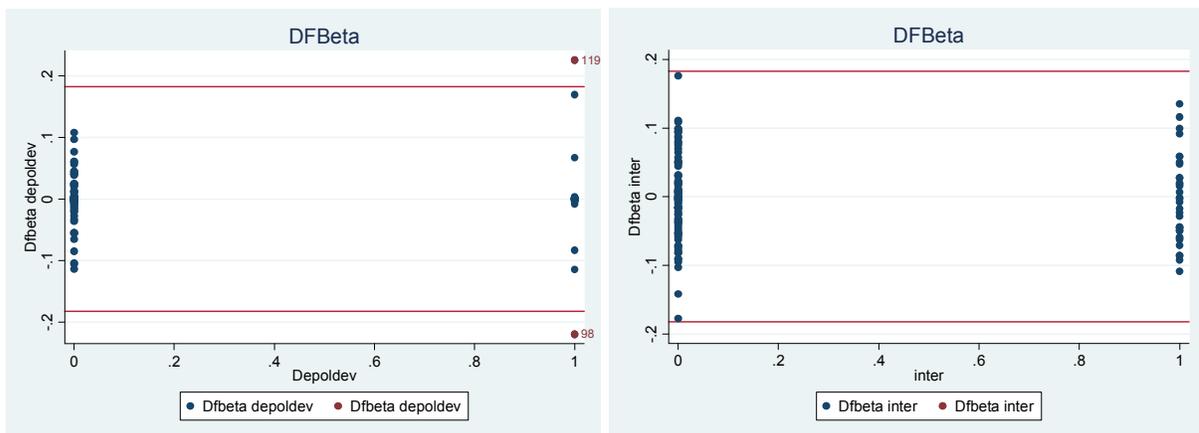


Figure M.25
DFbeta for Prtot Variable (120 observations)

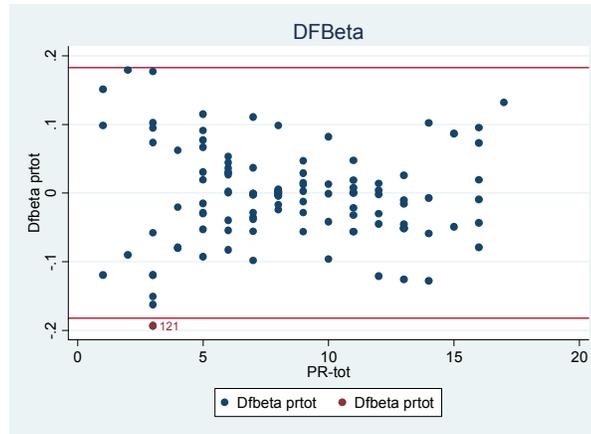


Figure M.26
Studentized Residuals on Posttreatment and Pretreatment Scores: 119 Observation Model (observation 6 deleted)

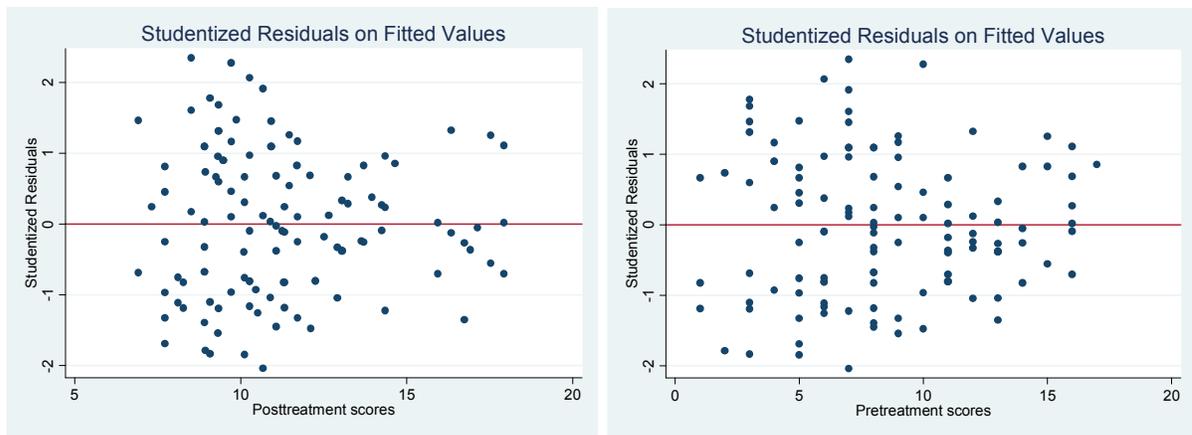


Figure M.27
Studentized Residuals on Inverse Normal “QQ” Plot (119 observations)

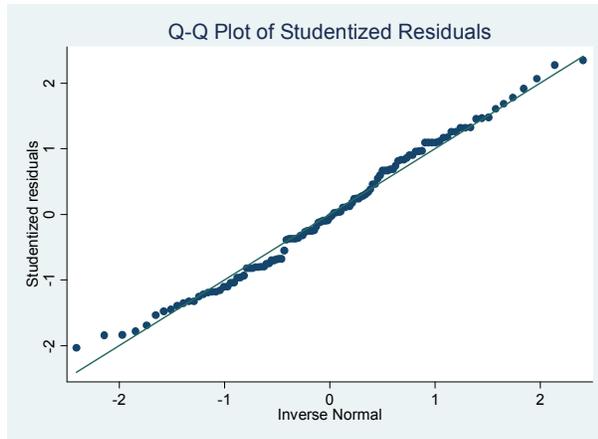


Figure M.28
Cook's Distance Plotted Against Leverage (119 observations)

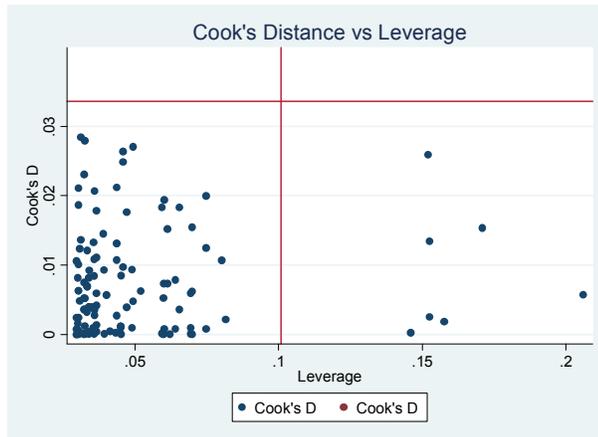


Figure M.29
DFbeta for Ranknco and Rankoff Variables (119 observations)

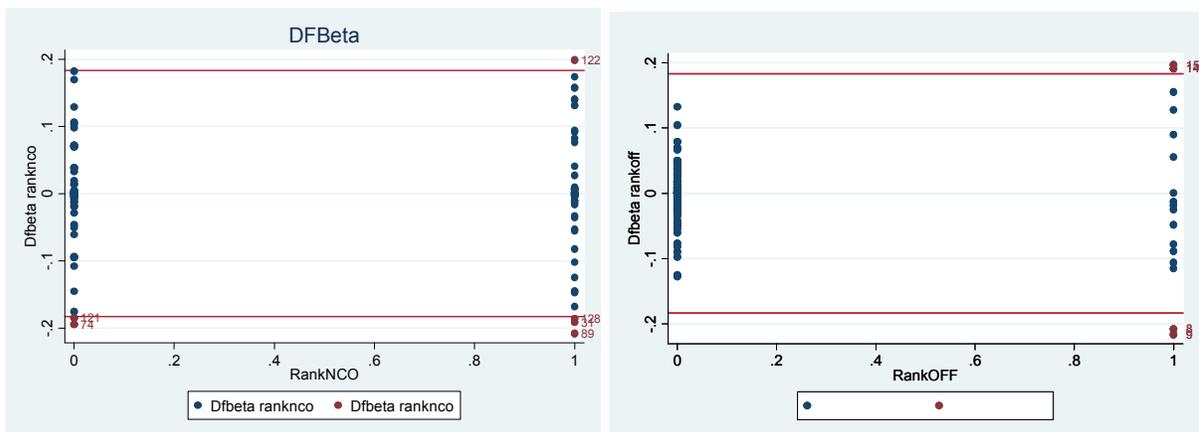


Figure M.30
DFbeta for Depoldev and InterVariables (119 observations)

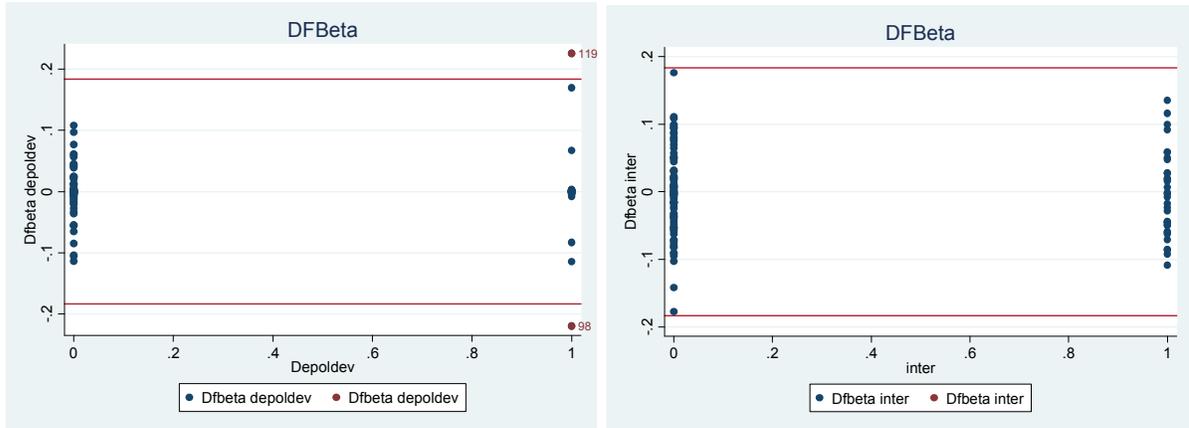


Figure M.31
DFbeta for Prtot Variable (119 observations)

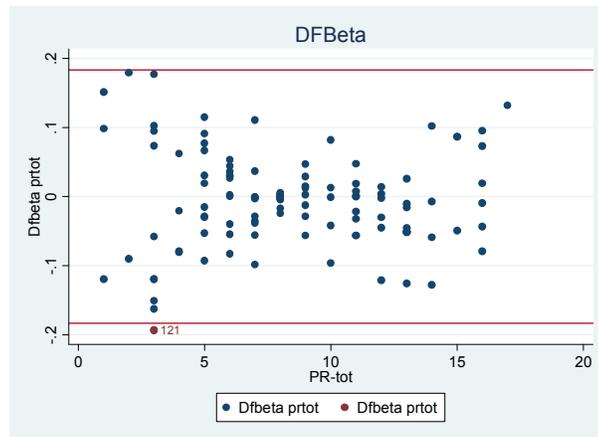


Table M.1
Hundredth House Reduced Model Coefficients and Significance

```
. regress psttot ranknco rankoff depoldev inter prtoto
```

Source	SS	df	MS	Number of obs = 119		
Model	870.476693	5	174.095339	F(5, 113) = 21.25		
Residual	925.960281	113	8.19433877	Prob > F = 0.0000		
Total	1796.43697	118	15.2240422	R-squared = 0.4846		
				Adj R-squared = 0.4618		
				Root MSE = 2.8626		

pssttot	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ranknco	.2535436	.7218462	0.35	0.726	-1.176564	1.683651
rankoff	3.685678	.8839567	4.17	0.000	1.9344	5.436955
depoldev	.9804014	1.167737	0.84	0.403	-1.333096	3.293899
inter	-3.38905	1.377954	-2.46	0.015	-6.119026	-.6590735
prtoto	.397978	.0720698	5.52	0.000	.2551948	.5407613
_cons	7.880678	.7619539	10.34	0.000	6.371109	9.390246

A data review of the available 130 observations revealed no inconsistencies that would support invalidating any of collected observations. The thorough influential point analysis resulted in 11 points that were candidates for deletion. To assess the impact of deleting these 11 points, regression analysis was conducted with this reduced dataset. No regression coefficients changed signs. No regression coefficients had large magnitude swings associated with the reduced model. No regression coefficients had changes to statistical significance. See Table L.2 for regression coefficient comparison between the 130-observation full model and the 119-observation model without influence points. This additional outlier and influential point analysis reinforces the confidence in the magnitudes of the regression coefficients for the full 130-observation model.

Table M.2
Hundredth House Final Model Coefficients Compared to Model without Influence Points

Final Model				Without Influence Points			Delta
Variable	Coefficient	t-stat	Sig	Coefficient	t-stat	Sig	Coefficient
ranknco	0.32	0.39	no	0.25	0.35	no	0.07
rankoff	3.58	3.7	>99%	3.69	4.17	>99%	-0.11
depoldev	0.93	0.77	no	0.98	0.84	no	-0.05
inter	-3.15	-2.13	>95%	-3.39	-2.46	>95%	0.24
prtot	0.45	5.6	>99%	0.40	5.52	>99%	0.05
constant	7.42	8.93	>99%	7.88	10.34	>99%	-0.46
Adj R ²	0.39			0.46			

Because of the concern that some of the variables might be collinear, we conducted a variance inflation factor analysis to test the level of multicollinearity. The results were negative with a threshold value of 10, our model resulted in a high of 4.92 and a mean value of 2.63 as shown in Table M.3. This means that our variables are not linearly dependent and therefore I do not have a concern of miss-estimation of the coefficients due to multicollinearity.

Table M.3
Hundredth House Multicollinearity Test – Variance Inflation Factor Assessment

Variable	VIF	1/VIF
inter	4.92	0.203254
depoldev	3.80	0.263425
ranknco	1.91	0.522998
rankoff	1.35	0.738635
prtot	1.15	0.870542
Mean VIF	2.63	

N. IRAQ COMMON EVENTS APPROACHES HANDBOOK REGRESSION INFLUENTIAL POINT AND OTHER THREATS TO STATISTICAL VALIDITY ANALYSES

Because of the concern that some of the variables might be collinear, we conducted a variance inflation factor analysis to test the level of multicollinearity. The results were negative with a threshold value of 10, our model resulted in a high of 1.8 and a mean value of 1.54 shown in Table M.1. These results indicate that there is a low degree of linear dependence between the regressors. This provides greater confidence that a miss-estimation of the regression coefficients did not occur, providing more confidence in the regression results.

Table N.1
Iraq Common Event Approaches Handbook Variance Inflation Factor Analysis

Variable	VIF	1/VIF
F_form_303 (Rules of Engagement)	1.8	0.55508
F_form_306 (Cordon & Search)	1.62	0.61726
F_form_302 (Dismounted Patrol)	1.62	0.61808
F_form_308 (Secure Meeting Site)	1.62	0.61916
F_form_305 (React to Indirect Fire)	1.6	0.62452
gp1_td (Assessed training days 1-4)	1.6	0.62671
F_form_301 (Quick Reaction Force)	1.59	0.62792
gp2_td (Assessed training days 5-9)	1.55	0.64435
F_form_304 (Conduct Checkpoint)	1.55	0.64643
F_form_307 (Raid with Iraqi Army)	1.51	0.66258
F_form_309 (Consequence Mgmt)	1.4	0.71362
treatment (received handbook)	1.01	0.98894
Mean VIF	1.54	

Scatterplot, residual, and outlier analysis of preliminary regression model

We conducted standard preliminary outlier analysis on the model starting with the global properties of the model. We first reviewed a scatterplot of average total scores versus treatment (shown in Figure N.1). We noted that the extreme limits in scores for the control group was slightly larger than the extreme limits for the treatment group – nothing remarkable was noted that would suggest a pattern of outliers.

Figure N.1
Iraq Common Event Approaches Handbook Scatterplot: Average Total Scores versus Treatment

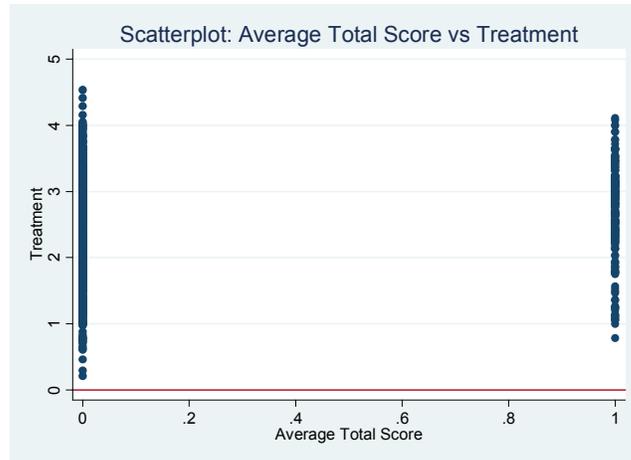
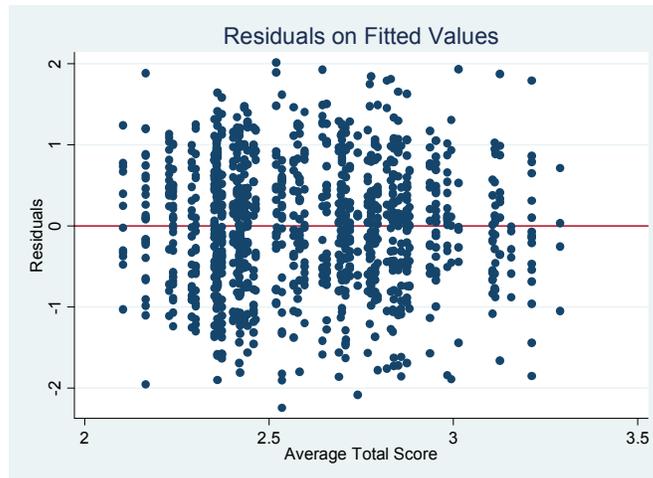


Figure N.2 depicts the plot of the residuals on the fitted values for average total scores. The review of residuals on average total scores is also unremarkable with no patterns in the residuals and values generally ranging from -2 to +2. These results indicate that the error terms are normally and independently distributed despite our belief that the observations within companies may not be wholly independent. This finding adds confidence to the regression results.

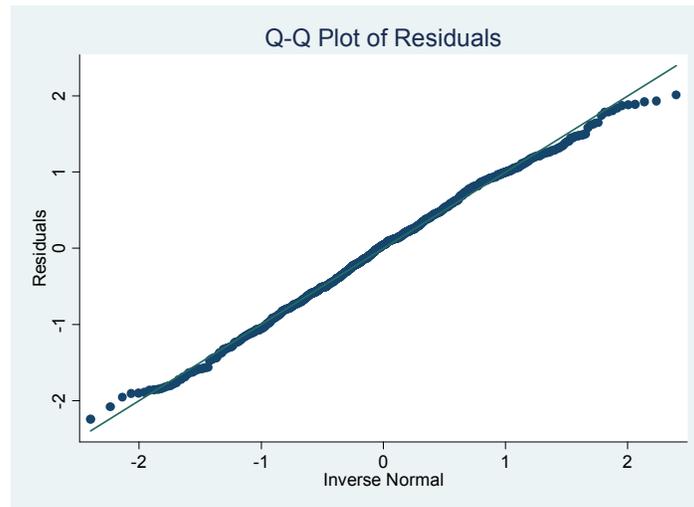
Figure N.2
Iraq Common Event Approaches Handbook: Residuals versus Average Total Scores



The QQ plot of the residuals, plotting the inverse normal against the residuals is shown in Figure N.3. This plot was also unremarkable with points generally aligned along the normal line

showing no indication that the data was not normally distributed.¹³² These results also add confidence to the regression results.

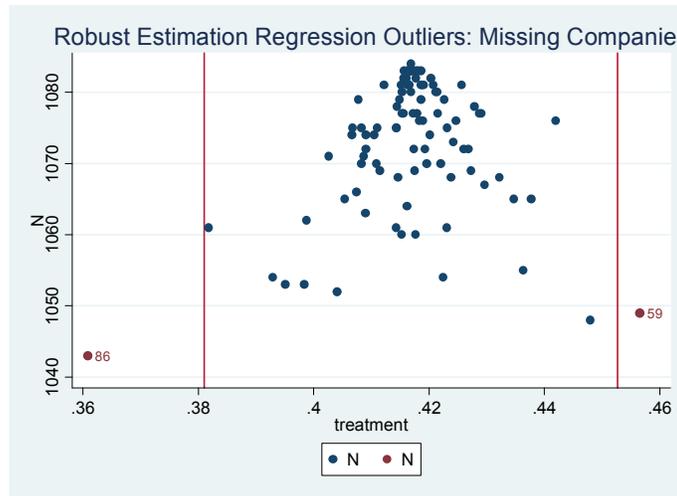
Figure N.3
Iraq Common Event Approaches Handbook: QQ Plot



Because we identified that a robust estimation method (clustering) to fit our data through regression was necessary, we understood that local diagnostic checks such as leverage, cooks distance, and DFBeta that all assume independent observations (normality) would not be fully appropriate. In fact, the Stata software would not even complete these normality tests as a “gross” review. Instead we used a modified approach to look for outliers by running the regression using our company level observations (sht_un_cd) multiple times and dropping one company during each regression. The coefficients were then compared to determine if any changed by more than three standard deviations from the original model treatment coefficients. There were two clusters for which dropping their observations caused the treatment coefficients to change by more than three standard deviations (see Figure N.4). These clusters were identified as cluster 59 and cluster 86.

¹³² This diagnostic was conducted despite knowing that our observations were not wholly independent to give us a sense for the results.

Figure N.4
Robust Estimation Regression Outliers: Missing Companies



Dropping cluster 59 would cause the treatment coefficient to increase. Reviewing the data for cluster 59 revealed that there were a total of 35 observations collected by five different observers. Three of the observers had four or more rotations of experience ($\text{exp4}=1$) and 22 of the 35 observations were completed by these experienced observers. There was a relatively large cohort of observers and a mix of experience that diminished the concern that a systematic bias resulted in this influential point. Dropping observation 86 would cause the treatment coefficient to decrease to 0.361 from the base .417. Reviewing the data for cluster 86 revealed that there were a total of 40 observations collected by six different observers. Three of the six observers had four or more rotations of experience ($\text{exp4}=1$) and 16 of the 40 observations were completed by these experienced observers.

Dropping either or both of the outliers would not change the conclusion from the results of the Iraq Common Event Approaches Handbook analysis. There is a robust treatment effect of either 0.361 or 0.457 if one or the other clusters are deleted and the effect is closer to the original result of 0.417 if both clusters are deleted. In either case, the data analysis confirms a large and statistically significant treatment effect associated with employment of the Iraq Common Events Approaches Handbook.

We also conducted a review of the data collection, data transcription, and data cleaning methods to assess whether there were any identifiable errors or inconsistencies that might invalidate any observations. We found no such occurrences.

Because we did not identify any systematic bias in the observations (scores came from a large number of observers with a cross-section of experience), there were no apparent data collection errors, and the demonstrated lack of significant influence on the results from modified diagnostics assessments (deleting clusters would change magnitude slightly but not direction or significance), we accepted our preliminary model as the final best fit regression model for explaining average total scores.

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