



**AN ANALYSIS OF CIVIL ENGINEER
OFFICER CONTINGENCY TRAINING**

THESIS

Rusty J. Vaira, Captain, USAF

AFIT/GEE/ENV/01M-22

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.

20010508 095

The views expressed in this thesis are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the U.S. Government.

AN ANALYSIS OF CIVIL ENGINEER
OFFICER CONTINGENCY TRAINING

THESIS

Presented to the Faculty

Department of Systems and Engineering Management

Graduate School of Engineering and Management

Air Force Institute of Technology

Air University

Air Education and Training Command

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Engineering and Environmental Management

Rusty J. Vaira, B.S.

Captain, USAF

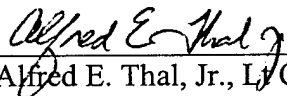
March 2001

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.

AN ANALYSIS OF CIVIL ENGINEER
OFFICER CONTINGENCY TRAINING

Rusty J. Vaira, B.S.
Captain, USAF

Approved:



Alfred E. Thal, Jr., Lt Col, USAF (Chairman)

1 MAR 01
date



Michael T. Reh, Maj, USAF (Member)

9 Feb 01
date



John D. Schuliger, Capt, USAF (Member)

13 FEB 01
date

Acknowledgments

There are many people that I am greatly indebted to for their indispensable support during this research effort. I would first like to thank my thesis advisor, Lt Col Al Thal, for his professional and personal assistance in every step of this research effort. His guidance and suggestions were vital to my success. Another big thank you goes to committee members Major Mike Rehg and Capt John Schuliger. Their enthusiasm and knowledge helped forge a rough idea into a finished product.

As well, I am grateful to Lt Col Nathan Macias and the Det 1, 823rd RED HORSE Squadron for sponsoring my thesis. Lt Col Macias provided invaluable information and motivation for completing the contingency training research. I would also like to thank Mr Ed Hess, who provided critical computer and technical support in developing the web-based survey. I am obliged to him for his donation of valuable time and effort during the data gathering portion of this research.

A special thank you goes to the hundreds of AF civil engineer officers who participated in this study by responding to the CE Officer Contingency Training Survey. In addition, I would like to specifically thank fellow classmates Capt Clark, Capt Gilpin, Capt Kale, Capt Richter and Lt Payne for all of their help and moral support throughout this process.

Finally, I would like to express my heartfelt thanks and deepest appreciation to my wife and children. I am so blessed to have such a wonderful family whose patience, support, and encouragement were essential throughout this endeavor.

Table of Contents

	Page
Acknowledgments	iv
List of Figures.....	viii
List of Tables	x
Abstract.....	xiii
I. Introduction	1.1
Background.....	1.1
AF Civil Engineer Mission.	1.3
Expeditionary Aerospace Force.	1.4
Strategic Environment.....	1.4
Training Avenues.....	1.4
Manning Levels.....	1.7
Summary.....	1.7
Specific Problem Statement.....	1.8
II. Literature Review	2.1
History of Air Force Civil Engineers	2.1
Training Beginnings.....	2.6
Training Overview.....	2.8
Spectrum of Employment.....	2.8
Home Station Training and Silver Flag Training.....	2.11
Civil Engineer and Services School.....	2.15
MGT 101 – Introduction to the Base Civil Engineer Organization.....	2.16
MGT 585 – Contingency Engineer Command Course.....	2.18
Training Documents	2.18
Past Studies.....	2.21
Kohlhaas and Williams.	2.21
Smith.	2.22
Morris.....	2.22
Waggoner and Moe.	2.23
Cannan.....	2.23
Gleason.....	2.24
Lawrence.	2.24
Training Program Evaluation	2.25
Level 1: Reaction.	2.26
Level 2: Learning.	2.26
Level 3: Behavior.....	2.27
Level 4: Results.....	2.28

	Page
III. Methodology	3.1
Data Collection Method.....	3.1
Survey Population.....	3.2
Survey Development	3.4
Define Objectives.....	3.4
Collect Information.....	3.5
Develop Questionnaire.....	3.6
Scales.....	3.7
Yea-sayers and Nay-sayers.....	3.8
Survey Sections.....	3.8
Conduct Survey.....	3.9
Analyze Results.....	3.10
Recommend Course of Action.....	3.13
IV. Analysis.....	4.1
General Demographics	4.1
Significance Levels.....	4.4
Silver Flag Analysis.....	4.5
Silver Flag Statement.....	4.8
Silver Flag Reliability and Factor Analysis.....	4.9
Silver Flag Results.....	4.10
Silver Flag – Deployed vs Non-Deployed	4.11
Home Station Training Analysis	4.12
Home Station Training Reliability and Factor Analysis.....	4.16
Home Station Training Results.....	4.16
HST – Deployed vs Non-Deployed.....	4.17
Civil Engineer and Services School Analysis	4.18
CESS Reliability and Factor Analysis.....	4.20
CESS Results.....	4.20
CESS – Deployed vs Non-Deployed.....	4.21
Training Task Analysis.....	4.22
Overall Training Task Results – Mission Importance.....	4.23
Overall Training Task Results – Training Adequacy.....	4.24
Overall Training Task Results – MI and TA Difference.....	4.24
Training Tasks - Deployed versus Non-Deployed For Each Question.....	4.25
Training Tasks - Deployed & Non-Deployed (Compare MI to TA).....	4.27
Individual Survey Statement Responses.....	4.28
Additional Comments.....	4.28
Summary of Analysis	4.29
V. Conclusion.....	5.1
Primary Objective: Overall Adequacy of CE Officer Contingency Training	5.1
Research Objective #2: Adequacy of Current Training Programs	5.1
Silver Flag.....	5.2

	Page
Home Station Training.....	5.2
Civil Engineer and Services School.....	5.3
Recommendations.....	5.5
Research Objective #3: Rank Differences.....	5.6
Research Objective #4: Deployed versus Non-Deployed.....	5.7
Final Comments.....	5.7
Future Research Opportunities.....	5.8
Analysis of Additional Comments.....	5.8
Professional Engineering Development.....	5.8
Current Curriculum Development.....	5.8
Appendix A: Survey Package	A.1
Steps to Emailing Survey:	A.2
Copy of Survey Email:	A.3
Copy of Follow-up Email:.....	A.4
CE Officer Contingency Training Survey (Paper Based)	A.5
Appendix B: Responses to Survey Demographic Statements.....	B.1
Appendix C: Factor Analysis Pattern Matrix Tables.....	C.1
Appendix D: Supporting Information Tables for SF, HST, & CESS.....	D.1
Appendix E: Training Task Response Breakdown	E.1
Appendix F: Responses to Each Survey Statement	F.1
Appendix G: Additional Comments.....	G.1
Second Lieutenant Additional Comments.....	G.2
First Lieutenant Additional Comments	G.4
Captain Additional Comments	G.6
Major Additional Comments	G.18
Lieutenant Colonel Additional Comments.....	G.23
Colonel Additional Comments	G.26
Bibliography	Bib.1
Vita	Vit.1

List of Figures

Figure	Page
Figure 2-1: Spectrum of Employment	2.9
Figure 2-2: Contingency Tier Training	2.15
Figure 3-1: Survey Process Steps	3.4
Figure 3-2: Likert Scales (Used to measure SF, HST & CESS training)	3.7
Figure 3-3: Training Task Scales	3.8
Figure 4-1: Usable Survey Response by Rank	4.3
Figure 4-2: Deployment Responses	4.4
Figure 4-3: Silver Flag Training Attendance Responses	4.6
Figure 4-4: SF Score Comparison by Rank	4.11
Figure 4-5: HST Participation.....	4.13
Figure 4-6: HST Contingency Training (hrs/month)	4.14
Figure 4-7: Performance of Contingency Tasks During Peacetime Duties	4.14
Figure 4-8: CESS Attendance Responses	4.18
Figure B-1: Total Number of Responses to Question #5a	B.2
Figure B-2: Number of Responses by MAJCOM to Question #5b	B.3
Figure B-3: Number of Responses to Question #5c	B.4
Figure B-4: Number of Responses to Question #5d	B.5
Figure B-5: Total Number of Responses to Question #5e	B.6
Figure B-6: Total Number of Responses to Question #5f	B.7
Figure B-7: Responses to Questions #5e and #5f	B.8
Figure B-8: Total Number of Responses to Question #5g	B.9

	Page
Figure B-9: Total Number of Responses to Question #5h.....	B.10
Figure B-10: Total Number of Responses to Question #5i.....	B.11
Figure D-1: Silver Flag Training Attendance Responses	D.2
Figure D-2: HST Participation.....	D.3
Figure D-3: CESS Course Participation	D.4
Figure F-1: Likert Scale (Used for Silver Flag Training)	F.2
Figure F-2: Likert Scale (Used for Home Station Training).....	F.4
Figure F-3: Likert Scale (Used for Civil Engineer and Services School).....	F.6
Figure F-4: Likert Scale (SF - Repeated).....	F.8
Figure F-5: Likert Scale (HST - Repeated).....	F.10
Figure F-6: Likert Scale (CESS - Repeated).....	F.12

List of Tables

Table	Page
Table 2-1: Category I Training.....	2.12
Table 2-2: Category II Training.....	2.13
Table 2-3: Mgmt 101 Training Topics.....	2.17
Table 3-1: Advantages and Disadvantages of Web-Based Surveys	3.3
Table 3-2: Survey Constructs.....	3.5
Table 4-1: Survey Participation Results	4.2
Table 4-2: Response Rate by Rank.....	4.3
Table 4-3: Breakdown of Responses to SF Training.....	4.7
Table 4-4: SF Construct and Statement Description.....	4.8
Table 4-5: SF Reliability Measure	4.9
Table 4-6: Silver Flag Results.....	4.10
Table 4-7: Silver Flag Significant Differences	4.11
Table 4-8: Deployed vs Non-Deployed Silver Flag Results.....	4.12
Table 4-9: HST Construct and Statement Description	4.15
Table 4-10: HST Reliability Measure.....	4.16
Table 4-11: Home Station Training Results	4.17
Table 4-12: Deployed vs Non-Deployed HST Results.....	4.18
Table 4-13: CESS Construct and Statement Description	4.19
Table 4-14: CESS Reliability Measure.....	4.20
Table 4-15: CESS Results.....	4.20
Table 4-16: CESS Significant Differences	4.21

	Page
Table 4-17: Deployed vs Non-Deployed CESS Results.....	4.22
Table 4-18: Training Task Likert Scale	4.22
Table 4-19: Mission Importance vs Training Adequacy (sorted by MI)	4.23
Table 4-20: Mission Importance vs Training Adequacy (sorted by TA).....	4.24
Table 4-21: Mission Importance vs Training Adequacy (sorted by difference).....	4.25
Table 4-22: Training Tasks (deployed vs non-deployed)	4.26
Table 4-23: Training Tasks – Deploy & Non-deployed (Compare A to B)	4.27
Table 4-24: Summary of Overall Results	4.29
Table A-1: Steps to Emailing Survey	A.2
Table B-1: Breakdown of Responses by Rank to Question #5a.....	B.2
Table B-2: Breakdown of Responses by Rank and MAJCOM (%) to Question #5b.....	B.3
Table B-3: Breakdown of Responses by Rank and MAJCOM to Question #5c	B.4
Table B-4: Breakdown of Responses by Flight/Position to Question #5d	B.5
Table B-5: Breakdown of Non-Combat Deployed Responses to Question #5e.....	B.6
Table B-6: Breakdown of Combat Deployed Responses to Question #5f.....	B.7
Table B-7: Breakdown of Responses by Rank to Question #5e and #5f.....	B.8
Table B-8: Breakdown of Responses to Question #5g	B.9
Table B-9: Breakdown of Responses to Question #5h	B.10
Table B-10: Breakdown of Responses to Question #5i	B.11
Table C-1: Silver Flag Factor Analysis	C.2
Table C-2: HST Factor Analysis.....	C.3
Table C-3: CESS Factor Analysis.....	C.4

	Page
Table C-4: CESS Factor Analysis.....	C.4
Table D-1: Breakdown of Responses to SF Training	D.2
Table D-2: Breakdown of HST Participation	D.3
Table D-3: Breakdown of CESS Course Enrollment	D.4
Table E-1: Training Task Likert Scale.....	E.2
Table E-2: Training Tasks (sorted by mission relevance)	E.2
Table E-3: Training Tasks (sorted by training adequacy – worst to best)	E.4
Table E-4: Training Tasks (sorted by difference – large to small)	E.6
Table E-5: Deployed vs Non-Deployed Training Task Results	E.8
Table E-6: Deployed & Non-Deployed Training Task Results (Compare A to B).....	E.13
Table F-1: Silver Flag Training Responses to Individual Statements (Rank)	F.2
Table F-2: Home Station Training Responses to Individual Statements (Rank).....	F.4
Table F-3: CESS Responses to Individual Statements (Rank)	F.6
Table F-4: Silver Flag Responses to Individual Statements (MAJCOM)	F.8
Table F-5: HST Responses to Individual Statements (MAJCOM)	F.10
Table F-6: CESS Responses to Individual Statements (MAJCOM)	F.12
Table G-1: Additional Comments by Rank	G.2

Abstract

The primary objective of this research was to investigate the current overall civil engineer officer contingency training program and determine if civil engineer officers think it is adequately preparing them to perform in a contingency environment. In accomplishing this objective, this research explored the perceptions that officers have about the contingency training that is available through three primary training programs (Home Station Training, Silver Flag training, and Civil Engineer and Services School training). The overall intent of the author was to gauge how the officers feel about their contingency training and offer some suggestions on how to improve the training.

To collect data pertinent to this research, a web-based survey was developed and civil engineer (CE) officers were asked to provide answers to demographic and training perception statements. The results from this study show that from an overall perspective CE officer training is adequately preparing them to perform in a contingency environment. However, the results also indicate that there are several areas where improvements could be made to make the program even better. These improvements range from allowing more officers to attend Silver Flag training to introducing an additional contingency training course. This research also indicates that there was no significant difference in how officers of various rank responded to the survey statements. Deployment experience did not have an effect on responses either, as officers who have been on a contingency deployment answered the survey questions in the same manner as those who have never deployed.

AN ANALYSIS OF CIVIL ENGINEER OFFICER CONTINGENCY TRAINING

I. Introduction

Background

Whether in the deserts of Saudi Arabia, the mud of Bosnia, the humidity of Rwanda, or along the hurricane-ravaged Florida coast – Air Force civil engineers, deployable worldwide at a moment's notice, have repeatedly proven indispensable to America's air power team. Their unique skills, responsiveness, and capabilities lay the foundation for Air Force projection of air and space power [9]. Air Force history abounds with examples of how its civil engineers have distinguished themselves in a variety of missions ranging from support of combat forces in wartime and aid to military and civilian citizens ravaged by natural disasters in peacetime [4:6].

This success has not come easy, as Air Force engineers have experienced a myriad of changes and survived many struggles over the course of their proud history. The roots of the Air Force engineering function date back to before World War I, when the engineering function was originally a small part of the Army Signal Corps. When the Air Force became a separate unit in 1947, the Army retained responsibility for supporting the Air Force's combat engineering requirements. However, during the 1950s and the Korean War, the engineering community was presented with tremendous capability challenges that needed to be addressed. There was also much political maneuvering between the Army and the Air Force over control of the engineering units, with the Air Force eventually "acquiring" their own organic capability. After several real-world

situations (Lebanon crisis, 1958; Berlin crisis, 1961; and the Cuban Missile Crisis, 1962) a study group was formed to review the Air Force civil engineering combat support mission [9]. As a result of this review, the Prime BEEF (Base Engineer Emergency Force) program was created in 1964 with the underlying objective being to “develop and maintain a highly skilled, agile military combat support civil engineer force capable of rapid response in support of worldwide contingency operations” [15]. Since that time, the structure, organization, and size of the Prime BEEF program have continuously evolved with the needs of the Air Force.

Central to the Prime BEEF concept from its inception has been a military-civilian mix of the peacetime force [4:12]. Military members work and train right along side their civilian counterparts. When tasked to support a contingency operation, the military members leave their permanent duty station and assume their wartime or contingency roles at a deployed location. With the military gone, the civilians remaining at their home station must operate and maintain the base infrastructure. Because the Air Force’s civil engineering warfighting capability is dependent upon a force structure that is tasked both with peacetime and wartime duties, training becomes a centerpiece of the Prime BEEF concept [4:12]. Even though the wartime mission is crucial, training inevitably suffers as commanders struggle to balance the unit’s peacetime mission with contingency training requirements. This is what then-Lt Col Cannan called the *peacetime paradox* [4:14]:

The primary mission dictates that we prepare for war. Since our wartime force also has peacetime jobs, they must train in wartime skills outside their routine peacetime duties. The peacetime system rewards those who excel at peacetime activities, even though these activities do not contribute to wartime readiness. Therefore, the primary mission suffers despite its acknowledged importance.

AF Civil Engineer Mission. The primary mission of the Air Force Civil Engineer community is guided by the United States Air Force Civil Engineer mission statement, which is to [10]:

Provide, operate, maintain, restore, and protect the installations, infrastructure, facilities, housing, and environment necessary to support air and space forces having global reach and power, across the range of military operations.

It is of particular significance that the Civil Engineer's peacetime mission is not always the same as its wartime mission. Unlike most other Air Force communities, the tasks performed and equipment used during day-to-day peacetime operations may only be a fraction of what is done and used during wartime commitments [12].

In peacetime, civil engineer units work as entities performing routine tasks of operations, maintenance, and repair. In a contingency situation, their tasks will be many times more demanding. More rapid response will be needed, fewer people per task will be available, materials will be in short supply, no detailed planning will have been accomplished, the environment will be foreign, perhaps hostile, and there will be no room for error [17]. Even so, the majority of peacetime civil engineer (CE) engineering duties align well with many typical deployment requirements (*i.e.*, deployed locations with in-place, fixed infrastructures). However, many deployed locations require individuals who

are proficient at operating equipment unique to a contingency environment, or who have special skills dealing with personnel from foreign nations [12].

Expeditionary Aerospace Force. The Air Force has migrated to the Expeditionary Aerospace Force (EAF) concept, which calls for a structured and systematic deployment process. Prior to the EAF, commanders were allowed flexibility to individually “choose” personnel to perform at respective deployment locations; consequently, many of the same personnel were repeatedly tasked for deployments [12]. With the EAF, guidance emphasizes the need for “all” individuals who are likely to deploy to be adequately trained. As such, deployments will no longer be restricted to those members who have a unique contingency skill. In fact, CE commanders must now ensure that *all* assigned personnel are trained to meet their wartime responsibilities. The overall goal of the EAF is to ensure timely and equitable deployment of personnel to meet on-going mission requirements. By operating on a known schedule, deployments will become more predictable for Air Force members and their families.

Strategic Environment. There have been many global changes (*i.e.*, the breakup of the Soviet Union and Warsaw Pact) that have caused the strategic environment to change so dramatically that the United States military is no longer facing a single enemy [21]. Military members are being deployed with greater frequency to more locations in support of contingency operations short of war. These contingency operations range from civic actions, humanitarian missions (non-combat in scope), conflict avoidance or peacekeeping, to the initiation of a major theater war [15].

Training Avenues. As previously stated, CE personnel get many of their contingency skills from day-to-day peacetime activities. However, these peacetime

duties do not completely prepare CE personnel to perform their wartime tasks. Examples of wartime tasks not normally performed during peacetime include beddown of personnel and missions by siting, erecting, and maintaining expedient shelters and associated infrastructure; rapid runway repair for damaged airfields; and base recovery after attack (BRAAT). Activities associated with BRAAT include airbase damage assessment and repair, explosive ordnance reconnaissance, and minimum operating strip calculations.

With the multitude of different deployment scenarios, it is difficult for engineers to stay current on the plethora of required training. This is especially true of the CE officer whose duties on a regular peacetime basis vary considerably from what is expected of them during a contingency operation. An officer must garner the necessary contingency training through structured programs to become proficient in contingency operations.

To achieve the skills necessary to perform these wartime tasks, civil engineers conduct training through the Air Force's Prime BEEF Home Station Training (HST) Program. Home Station Training, as its name implies, is training that is traditionally conducted at the individual's permanent duty location. HST is the primary place for engineers to develop the basic skills needed for military operations and disaster responses in war and peace.

Formal contingency training courses that are available for civil engineer officers are limited and there are currently only two mandatory contingency training courses that CE officers must attend. Both of these courses are conducted by the Civil Engineer and Services School (CESS), which is located at Wright-Patterson Air Force Base, Ohio.

The first training opportunity is the 8-week course, Introduction to the Base Civil Engineer Organization (MGT 101), which is mandatory for all officers new to the civil engineer career field. Officers normally attend within their first six months of being on active duty. During the first two weeks of this course, students learn general knowledge of the CE organization and flight-specific processes. During weeks three, four, and five, students learn engineering principles applicable to activities both at home station and in a deployed environment. Weeks six and seven prepare the officers to provide and maintain expedient beddown of mission essential functions in a deployed contingency situation. The last week of the course is a one-week “deployment” to the Silver Flag exercise site at Tyndall Air Force Base, Florida, for “hands-on” education in force beddown, rapid runway repair, disaster preparedness, services, fire rescue, bare base assets, and command and control [5].

The second training opportunity is the 1-week course, Contingency Engineer Command Course (MGT 585), which prepares mid-level CE officers (majors and captains with at least eight years commissioned service) for command during contingencies. The key components of the training include trends and impacts, organizational structures, command and control, resources, installation development, leadership and management, and natural disasters [6].

Besides the mandatory CESS courses and Home Station Training, the only other major contingency training avenue is to attend Silver Flag. The Silver Flag (SF) exercise program provides training for Prime BEEF personnel who have a mobility mission and a requirement to attend training at least every two years. The purpose of the program is to provide training free from home station constraints, and allow Prime BEEF teams to

train, practice, and complete contingency operations in a realistic environment for rapid deployment, anytime... anywhere. The Silver Flag program is essentially an extension of the Home Station Training program, but it offers a more hands-on approach with equipment not normally available at the base level. Even so, there are only limited slots available for officers, and only the critical members of the Prime BEEF team attend Silver Flag [19].

Manning Levels. There is currently a manning shortfall among CE captains (73% manned). As a result, second and first lieutenants (currently manned at 154%) are filling captain billets and being tasked with EAF rotations and contingency deployments that theoretically should be filled with more experienced officers [28]. The challenges that are associated with these jobs are beyond the scope of what is taught in MGT 101. As well, the topics covered in MGT 585 do not address some of these challenges and the lesson is tailored towards a higher ranking audience. This leaves an enormous contingency educational gap in the CE officer corps for officers with between two and eight years of service. It is during that same time period where a majority the CE officers are deployed to contingency locations [31].

Summary

Mission success in contingency operations depends on the level of individual and unit training. Civil engineer personnel must ensure their peacetime training reinforces the concept of “train the way you expect to fight.” The training must be comprehensive and as realistic as possible [9:32]. Former Chief of Staff, USAF, General Ronald R. Fogleman once said [9:5]:

We cannot become confused about the fundamental purpose of our armed forces. That purpose is their readiness to fight and win our nation's wars. As we reshape and train our forces, it must be for this purpose above all others.

While the type of contingency missions and responsibilities has changed, the training program for CE officers has not been kept up to par. While training is advocating a "BRAAT" and beddown mentality, the real-world scenarios and missions demand a much broader scope of knowledge that is not being provided through the current training media.

Specific Problem Statement

The primary objective of this study is to investigate the current overall civil engineer officer contingency training program and determine if civil engineer officers think it is adequately preparing them to perform in a contingency environment. This primary objective is supported by the following secondary objectives:

1. Determine how well the current contingency training programs are meeting the needs of the CE officer career field and provide recommendations for future course changes.
2. Investigate the differences in training perception between the different ranks of officers (Lieutenants through Colonels) to determine if there is a rank effect.
3. Investigate the differences in attitudes about contingency training between CE officers who have been deployed to those who have never been deployed.

II. Literature Review

This chapter examines applicable literature concerning the adequacy of the current contingency training being provided to Air Force Civil Engineer officers. First, a brief history of Air Force Civil Engineers will be discussed, followed by an overview of training. Next, the three main contingency training programs (Home Station Training, Silver Flag training, and Civil Engineer and Services School training) will be reviewed. This will be followed by a review of training documents pertinent to the Civil Engineer career field and a look at past studies that are related to the training of Civil Engineers. Finally, a short discussion on training program evaluation will be presented.

History of Air Force Civil Engineers

Air Force Civil Engineers are tasked with a tremendous role – supporting USAF operations anytime, anywhere, and in all conditions. With a proud heritage dating back to before World War I (WWI), Air Force Civil Engineers have been a key part of military operations for almost a century. During World War I, the engineering function was originally a small unit of the Army Signal Corps. In 1918, the Army Air Service (later renamed Army Air Corps) was established and eventually assumed control of construction projects. Throughout the 1930s, the Army Air Corps continued to grow and expand. In 1940, responsibility for the construction of Army Air Corps facilities in the Zone of Interior (continental United States) was transferred to the Corps of Engineers.

For construction overseas, a new engineering organization was established – the Aviation Engineers [13:7]. Long before Pearl Harbor, expanding missions within the Army Air Forces indicated the vital need for engineers specialized in the building of airfields overseas in support of tactical and strategic air operations. The Army Air Forces realized they needed their own engineers--troops who trained with it, spoke its language, and understood its needs. These forces were to be trained and equipped to rapidly construct advanced airfields close to, or even behind, enemy lines. They were also trained to improve and maintain existing facilities, as well as to repair airfields damaged by enemy bombing. They were also to be skilled in the camouflage of airfields and the construction of defensive works. Finally, with their trained riflemen and machine gunners, they were to be prepared to take an active part in defense of airfields. Such was the concept of the Aviation Engineers--troops who were trained to construct, conceal, maintain, and defend airfields [14; 23].

Immediately following the American entry into World War II (WWII), units of Aviation Engineers were deployed overseas and saw action on all fronts. They were tasked with activities such as constructing airfields, revetments, and roads; in locations ranging from the deserts of North Africa, to the European fronts in Italy, Normandy, Austria, and Czechoslovakia; to the Philippines and other Pacific islands. At the end of the war, 1,435 airfields located in 67 foreign countries had been used, built, or improved for or by the Army Air Forces [13:8-18].

When the Air Force became a separate service in 1947, Air Force construction continued to be programmed and budgeted by the Army Corps of Engineers; thus the Army retained the responsibility of supporting the Air Force's combat engineering

requirements. However, the Korean War presented tremendous challenges for Air Force engineers. Special Category Army with the Air Force (SCARWAF) troops were responsible for the construction, upgrading, expansion, and rehabilitation of airfields. The Air Force furnished funding and manpower authorizations; the Army organized, trained and equipped the SCARWAF engineer units and then placed them under Air Force control. This confusing concept led to many problems that hampered the engineers throughout the Korean War [13:18].

Problems encountered included the low level of readiness of SCARWAF aviation engineer units that seriously affected the conduct of air operations. This problem was compounded by the introduction of several new aircraft that required longer and wider runways, thicker pavements, more stringent criteria for clear zones, and increased facility support for fuel and munitions storage. The existing airfields were originally built for the lighter and slower WWII aircraft, and these airfields soon deteriorated under the heavier weight of the more modern aircraft. Other factors that contributed to the reduced capabilities of SCARWAF units included manpower shortages and obsolete equipment remaining from WWII. As a result of these handicaps, the aviation engineers were hard pressed to keep a runway open [13:19].

The lack of training, manpower shortages, and worn-out equipment continued to plague the aviation engineer units as the war progressed, severely degrading construction efforts. The acute shortage of repair parts and mechanics, and equipment abuse by untrained operators further aggravated an already difficult situation. The assessment of the engineers' role and accomplishments during the first two years of the war was generally disappointing. The official Air Force history of the Korean War stated: "In 2

years of war in Korea no single factor had so seriously handicapped Fifth Air Force operational capabilities as the lack of adequate air facilities” [13:20].

Recognizing the problem of SCARWAF training, all continental United States (CONUS) training was placed under the control of the Army Continental Air Command and the Army Aviation Engineer Force was established. The creation of this force was an important first step towards correcting the training problems, but it was not able to solve all of them. It was not until 1952 that the required engineer capability could be attained [13:20]. Considering the many difficulties encountered by the SCARWAF units during the conflict, their many accomplishments are doubly impressive. By the end of the war, Aviation Engineers had built or repaired 55 separate airfields from which the Air Force flew nearly 700,000 sorties [13:20]. Following the Korean War, and in lieu of the many problems encountered during the war, the Air Force requested permission to organize its own engineering function and transfer the SCARWAF engineers from the Army. In 1955, however, the Secretary of Defense decided to leave the engineers with the Army and abolish the SCARWAF, thus leaving the Air Force without its own combat engineers until the mid-1960s [13:21].

The Lebanon crisis of 1958, Berlin crisis of 1961, and Cuban missile crisis of 1962, combined with the commitment in Southeast Asia to illustrate the need for an Air Force engineer contingency capability to respond worldwide. In 1964 the Prime Base Engineer Emergency Force (BEEF) concept was consequently developed; and in 1965, the first Prime BEEF teams deployed to Southeast Asia (Vietnam) to erect revetments, construct barracks, perform electrical and plumbing work, and accomplish other beddown activities. The concept of a rapid response, skilled infrastructure support system was thus

established during the Vietnam conflict and has continued ever since [9:8]. During this same time period, a more long term, heavy construction and repair capability was needed to support the rapid force buildup in Southeast Asia. The Secretary of Defense Robert McNamara asked Secretary of the Air Force Harold Brown about the Air Force's capability to construct expeditionary airfields. Lacking such a capability, two Rapid Engineer Deployable Heavy Operational Repair Squadron, Engineering (RED HORSE) units were organized as self-contained units, with their own equipment and supplies, capable of deploying anywhere in the world [13:24].

During this period of rapid expansion, the civil engineering warfighting capability had transitioned from virtually no capability to a viable, battle-tested one represented by its Prime BEEF and RED HORSE units. As American involvement in Southeast Asia began to diminish, the Air Force decided to retain the RED HORSE and Prime BEEF capabilities, even though no contingency existed. In an effort to maintain high levels of readiness, a training program was initiated in which these units completed civil engineering projects that developed skills similar to those that would be required during a contingency.

The 1970s and 1980s were a time of relative peace. Even so, Air Force civil engineers remained busy. Prime BEEF and RED HORSE units were routinely deployed to assist local communities recovering from natural disasters. Typical activities included search and rescue missions following flooding in Pennsylvania and South Dakota, tornado cleanup efforts in Ohio, and recovery efforts following hurricanes. Prime BEEF and RED HORSE units also completed projects to protect and restore the environment, which had become a major concern for Air Force civil engineers. These units also made

great improvements in the quality of life for Air Force personnel in the 1970s; high priority was given to upgrading housing, recreational facilities, child development centers, and the workplace. The use of Prime BEEF and RED HORSE units for efforts such as those mentioned above continued to expand during the 1980s, a decade that brought other challenges with it as Air Force engineers found themselves working on major projects overseas. For example, Air Force engineers were responsible for the overall program management for the construction of two Israeli air bases in the Negev Desert. These projects presented special challenges because of the foreign government construction standards and the demanding construction schedule.

Training Beginnings. Off-station Prime BEEF team training had its beginnings at Wright-Patterson AFB, Ohio. That training, which developed limited beddown skills, moved to Tyndall AFB, Florida, in 1972 with its parent unit, the CE Construction Operations Group (which was renamed Headquarters, Air Force Engineering and Services Center (HQ AFESC) in 1977 and became today's Air Force Civil Engineer Support Agency (AFCESA) in 1991). In 1979, HQ AFESC relocated the Prime BEEF training to Field 4 at Eglin AFB, Florida, which includes runways that enabled civil engineers to learn rapid runway repairs (RRR) as never before--on actual bomb craters. Even though RRR was the focus of training, Prime BEEF teams also received hands-on training in bomb damage repair, force beddown, Harvest Eagle equipment, chemical warfare defense, and explosive ordnance reconnaissance. In October 1985, a major change in the training philosophy at Field 4 occurred; Prime BEEF contingency training was greatly expanded to include other specialties. The new Base Recovery After Attack (BRAAT) training combined traditional Prime BEEF curricula with those of disaster

preparedness, explosive ordnance disposal, firefighting, services, and commissary specialties. Through this combined training, in a realistic wartime environment, Air Force members trained in their specialty areas and learned how their individual functional areas interface for a coordinated base recovery effort. Air Force engineers were given the opportunity to display their capabilities during SALTY DEMO, an integrated Air Base Survivability demonstration conducted in May 1985 at Spangdahlem Air Base, Germany. For five days, the engineers demonstrated almost every aspect of BRAAT and focused attention on the importance of the engineers' role in airbase recovery and sortie generation [13:27].

Further evidence of the engineers' importance is the vital role they played during the Gulf War in 1990 with more than 3,000 Air Force engineers bedding down 55,000 people and 1,200 aircraft at nearly 30 sites; they erected 5,000 tents and constructed nearly 300,000 square feet of buildings. Through this effort, Air Force Civil Engineers demonstrated that they could provide a good living and working environment to support the projection of air power around the world [13:31].

In 1993, Air Force civil engineer team training evolved once again. The BRAAT training function, people, and equipment were moved from Eglin to Tyndall AFB and placed under Air Combat Command. At the new location, designated the Silver Flag exercise site, program emphasis was adjusted to give increased attention to beddown skills. This change was driven by the most probable use of AF civil engineers in the post-Cold War era following the collapse of the Warsaw Pact threat [13:32].

Training Overview

Mission success during any type of contingency depends upon the effectiveness of individual and unit training. CE personnel must train as nearly as possible the way they expect to function during contingency operations. Their training must be comprehensive and realistic, and they must train to meet all potential missions regardless of location and weather.

Spectrum of Employment. Just as with all facets of military readiness, civil engineer capability to deal adequately with worldwide hostilities and uncertainties is structured on the spectrum of military employment shown in Figure 2-1 [9:5]. Training must be tailored to the tasks required, which vary, to some degree, from mission to mission. The modern peacekeeper is called upon to perform an extraordinary range of roles and tasks [3]. To ensure that Air Force civil engineers are prepared to meet the challenges of different types of contingencies, it is critical that training be accomplished. Aristotle (384-322 B.C.) once said, “Excellence is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit” [29].

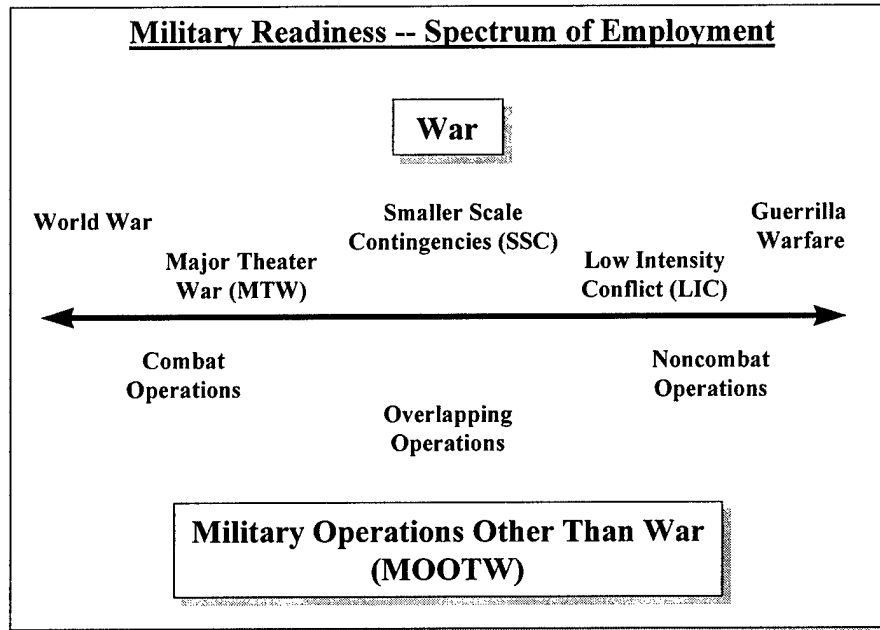


Figure 2-1: Spectrum of Employment [9:5]

Prime BEEF is the primary organizational structure for supporting both mobility and in-place contingency requirements. The structure, organization, and size of the Prime BEEF program have continuously evolved with the needs of the Air Force, though its support role and associated specific capabilities have remained relatively constant. The Prime BEEF concept has repeatedly proven itself, receiving high marks from senior leadership for its responsiveness, capabilities, and support of various conflicts and military operations other than war that continue to occur around the globe [9:8].

Engineers have assisted in many humanitarian efforts since the inception of Prime BEEF teams in 1964 [13:31]. Maj Gen Lupia, the former AF Civil Engineer, stated [26]:

Civil Engineers are critical to the Air Force mission, and between the current crisis in the Balkans and ongoing operations in Southwest Asia, our operations tempo is the highest it's been since Desert Storm. We directly supported the deployment and beddown of aircraft and people at bases throughout Europe in support of NATO Operation Allied Force and Joint Task Force Shining Hope. Now, with the peacekeeping and humanitarian relief operations underway in Kosovo and Albania, Prime BEEF and RED HORSE are bedding down forces from all services and repairing and upgrading the airfield infrastructure necessary to deliver assistance to hundreds of thousands of refugees ... Prime BEEF teams are building and maintaining tent cities and supplying water, sewage treatment, and electricity for aircrews and support personnel. They are setting up, operating, and maintaining emergency lighting and aircraft arresting barrier systems so our airplanes can safely launch and recover ... Our people are providing a rapid, professional response.

To be effective in the contingency environments described above organizations must train for contingencies; they must train mentally, physically, individually, and as a team. Since a civil engineer's contingency tasks are not the same as those they do in the course of everyday work, training is crucial. To maintain their contingency skills, civil engineers must have periodic practice to develop and maintain skills needed to effectively respond to disasters, military operations, and war.

The foundation for this training is Home Station Training (HST) and Silver Flag exercise site training programs. A third training program, specific to CE officers, includes the contingency courses offered by the Civil Engineer and Services School (CESS), at Wright-Patterson AFB, OH. In addition, there are certain computer based training courses and review materials that are available—but these essentially augment the HST programs.

Home Station Training and Silver Flag Training. Home Station Training and Silver Flag training are managed through the base's Civil Engineer Prime BEEF program. Home Station Training (HST), as its name implies, is training that is traditionally conducted at the individual's permanent duty location. HST is the primary place for engineers to develop the basic skills needed for military operations and disaster responses in war and peace. Some home station training is mandated, while other elements are not. The significance of home station training cannot be overemphasized. For over 70 percent of the Prime BEEF team and for all others not in mobility positions, HST is the only contingency training that the member will receive [13:110].

Air Force Instruction (AFI) 10-210, Prime Base Engineer Emergency Force (BEEF) Program, provides the guidance necessary to carry out the required training. As stated in AFI 10-210, the first objective of the Prime BEEF program is to, "Develop and maintain a highly skilled, agile military combat support civil engineer force capable of rapid response in support of worldwide contingency operations" [16:6].

To reach this objective, Prime BEEF forces need to train to meet a full range of missions and tasks expected in the contingency environment. The basic civil engineer missions include force beddown of Air Force units and weapons systems; operation and maintenance of Air Force facilities, infrastructure, and installations; aircraft rescue and facility fire suppression; command and control staff augmentation; emergency repair of air bases; construction management of emergency repair and force beddown activities; rendering safe and disposal of explosive ordnance; and monitoring and protecting resources subject to conventional, nuclear, biological, and chemical attack. Civil

engineers execute these missions either with in-place forces or by deploying the proper types and quantities of personnel [16:6].

While a civil engineer officer does not perform all of these tasks individually, the officer still must have a working knowledge of many of these required tasks. In order to do this, a set list of requirements falling into three categories and tiers has been established as outlined in AFI 10-210.

Tier 1 Training. This training represents the home station training portion that includes Category I training of classroom knowledge, computer-based training, videotape learning, as well as Category II hands on training. While a complete listing of all tasks can be found in AFI 10-210, a synopsis of the HST Category I and Category II training is depicted in Tables 2-1 and 2-2.

Table 2-1: Category1 Training

1. <i>Prime BEEF Orientation/General Contingency training</i> – emphasizes the individual's role and how he or she fits into the Prime BEEF program. It also includes an overview of civil engineer doctrine, operating concepts, equipment, organization, and contingency missions pertaining to the unit. This training also includes general contingency skills such as Nuclear, Biological, Conventional defense, explosive ordnance reconnaissance, law of armed conflict, and other similar training tasks.
2. <i>Field Sanitation and Health Training</i> – training includes personal hygiene, control of diseases, kitchen and mess sanitation, water purification, self-aid buddy care procedures, and related topics.
3. <i>Expedient Methods</i> – provides training in expedient methods in subject areas such as force beddown, field construction, repair, and destruction methods.
4. <i>Force Protection</i> – introduces concepts of personal work party and convoy security, air base defense operations, defensive fighting positions, revetments and similar topics.
5. <i>Deployment Support</i> – training on tasks which are required to deploy, such as deployment management, computer products maintenance and preparation, hazardous cargo certification, equipment custody, and courier duties.

[16]

Table 2-2: Category II Training

1. <i>Government Vehicle and Equipment Operations Training</i> – training on how to operate select vehicles and equipment necessary for deployments.
2. <i>Nuclear, Biological, and Chemical Defense Training</i> – training on proper wear of chemical warfare defense gear, chemical detection equipment, and other similar topics relating to chemical-biological threats, avoidance, detection, and elimination.
3. <i>Field Sanitation and Health Training</i> – complete hands on training in self-aid buddy care and cardiopulmonary resuscitation (CPR), as well as in kitchen and mess sanitation, water purification, and similar topics.
4. <i>Expedient Methods</i> – complete hands on training in expedient methods on beddown, field construction, repair, and destruction methods. This includes such things as how to put up a temper tent, put up camouflage netting, building revetments, etc.
5. <i>Force Protection</i> – hands on training on personal, work party, and convoy security, as well as air base defense operations. This training also includes M-16 rifle qualification training, and M-9 pistol training (officers and selected enlisted personnel).
6. <i>Deployment Support</i> – hands on training conducted to support deployments, such as cargo pallet preparation and netting.
7. <i>Field Training</i> – actual bivouac training that reinforces the skills learned in the previous subject areas by participating in a deployed scenario.

[16]

Tier 2 Training. This training provides advanced Category II training site capabilities for contingency skills that are not available during home station training because of equipment limitations. There are a number of locations where individuals can receive more in-depth training on some of the specialized contingency equipment. Some of these locations include the 49th Materiel Maintenance Group (MMG) at Holloman AFB, New Mexico, where training is conducted on various pieces of bare base equipment; the Air Mobility Warfare Center at Fort Dix, New Jersey; the Air National Guard's Regional Equipment Operator Training Site (REOTS); and finally, Air Education and Training Command (AETC) formal contingency training courses in areas

such as bare base equipment, air base combat engineering, and readiness management. Most of these AETC courses and training sites are only available to enlisted personnel and are not applicable to officers [16].

Tier 3 Training. This is category III training that is conducted at one of three Silver Flag exercise sites. The Tyndall AFB, Florida, site supports CONUS bases; while the Ramstein Air Base, Germany, and the Kadena Air Base, Okinawa, sites support United States Air Force Europe (USAFE) and Pacific Air Force (PACAF) bases, respectively. Prime BEEF teams go to one of these locations to receive “hands-on” individual instruction in their Air Force specialty on the numerous specialized pieces of contingency equipment available. Moreover, toward the end of their Silver Flag training week, the teams are subjected to a rigorous team training exercise aimed at pulling together all of the various facets of the bare base field environment; this includes problem solving, leadership, innovation, and team effort [9; 16; 19].

The purpose of the Silver Flag exercise site program is “to provide crew task qualification free from home station constraints, where Prime BEEF and Prime RIBS (Readiness in Base Services) core crews can train, practice, and complete contingency operations in a realistic environment for rapid deployment, anytime ... anywhere.” The Silver Flag program is essential to civil engineer contingency training because many contingency tasks simply cannot be trained at home station. The Silver Flag sites are free from many or all home station constraints and resource limitations, offering as much of a real world training environment as possible. The Silver Flag program is not designed as a unit’s primary *training* site, but more as an augmentation to Tier 1 HST. Units should be

prepared to perform in a field exercise environment when they arrive at Silver Flag because the sites *exercise* the wartime readiness of a unit [9; 16; 19].

Figure 2-2 summarizes the tiers and categories comprising contingency training. Each of these tiers provides one aspect of the overall contingency training regime that an engineer must undergo to be fully qualified as a deployable resource.

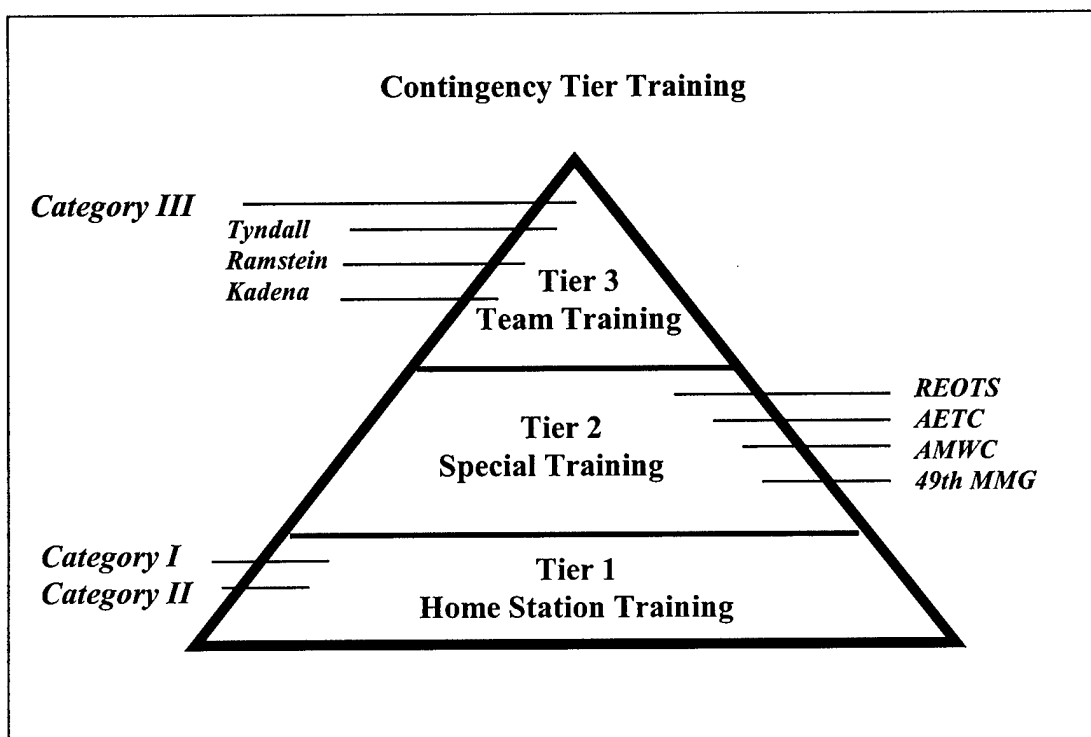


Figure 2-2: Contingency Tier Training [7]

Civil Engineer and Services School. Specific to civil engineer officers is the training conducted by the Air Force Institute of Technology (AFIT) Civil Engineer and Services School (CESS). This training includes two mandatory contingency courses. The first course is MGT 101, Introduction to Base Civil Engineer Organization, which is mandatory for civil engineer officers to attend within six months of entering active duty.

The second course the officers are required to attend is MGT 585, Contingency Engineer Command Course, which is a requirement for majors and senior captains, with at least eight years of commissioned service. As presented by the CESS course catalog descriptions, the following excerpts outline the objectives and course descriptions of these courses [5; 6].

MGT 101 – Introduction to the Base Civil Engineer Organization. The objective of MGT 101 is for each student to understand the peacetime organization of the Air Force Civil Engineer squadron, the responsibilities of each flight in the squadron, the interfaces with other activities at base level, and the planning and execution of programs. In addition, each student is to comprehend facility engineering principles required for peacetime and wartime contingencies. The students are also expected to be able to select, explain, and apply expedient methods of force beddown, air base operability, and base recovery for mission essential facilities during contingency operations.

The course is 8 weeks long with civilians attending the first 5 weeks only. The first week of the course familiarizes students with the Air Force CE organization and its management systems, techniques, processes, and operations. The course includes a general overview of CE organizational structure, work requirements and resources, information management, and in-service versus contract work. General management topics are also included which aid the student in developing management skills required as future Air Force leaders and managers. During week two of the course, students are assigned to the Engineering, Environmental, or Operations breakout specialty session and learn how flight-specific processes are accomplished. This session covers the processes, tools and interactions required to perform flight activities.

During weeks three, four, and five of the course, students learn facility engineering principles required for contingency engineering activities both at home station and in a deployed environment. Topics include skills required for facility design, construction, and repair in a contingency environment. These topics include all facility and infrastructure engineering specialties (Architectural, Civil, Structural, Mechanical, and Electrical Engineering principles). Weeks six and seven prepare civil engineer officers to provide and maintain expedient beddown of mission essential functions in contingency situations. This portion of the course describes expedient methods of force beddown, air base operability, and base recovery; a more detailed list of the topics is shown in Table 2-3.

Table 2-3: Mgmt 101 Training Topics

Air Force civil engineer responsibilities	Base and personal survivability
Asset Management	Facility hardening measures
Troop and aircraft beddown	Camouflage, concealment and deception
Expedient airfield pavements	Structural and utility repair
Airfield criteria	Chemical defense
Expedient buildings and munitions storage	Damage assessment
Water, waste, fuel, and electrical systems	Explosive ordinance reconnaissance
Arresting barriers	Rapid runway repair
Wartime fire protection and crash rescue	Disease control
Foreign cultural overviews	Leadership of troops under stress

[5]

The course does not address contingency planning above base level. Week eight is a field laboratory, called Officer Field Education (OFE), conducted at Detachment 1, 823rd RED HORSE, Tyndall AFB Florida. OFE provides "hands-on" education in force beddown, rapid runway repair, disaster preparedness, services, fire rescue, bare base

assets, and command and control. The primary audience is new CE officers or civilians who have just entered the career field [5].

MGT 585 – Contingency Engineer Command Course. The objective of MGT 585 is for each student to comprehend their responsibilities during contingencies, to understand the organizational structures they will work with and within, and comprehend the resources and resource avenues available to them. This 1-week course prepares mid-level CE officers (majors and captains with at least eight years commissioned service) for command during contingencies. These contingencies include wartime contingency operations such as deployments, force beddown, base recovery, and military operations other than war (MOOTW); and peacetime contingency operations such as base recovery after natural/manmade disasters and military support to civil authorities (MSCA). Major components of the course include trends and impacts, organizational structures, command and control, resources, installation development, leadership and management, and natural disasters. Officers will also learn how to operate with the Federal Emergency Management Agency (FEMA), as well as state and local emergency response agencies, while functioning within the military realms of responsibility. Officers slated to be deployed as team commanders/leaders within six months will have first priority for this course; the course is also considered mandatory for CE officers entering the service in and since 1984 [6].

Training Documents

There are several important documents that provide career guidance, training implementation, and required training tasks for CE officers. The first of these documents

is the *Career Field Education and Training Plan (CFETP)*, which is intended to identify the life-cycle education and training requirements of CE personnel [11]. To manage and ensure that all required training, both professional and contingency, is accomplished, a CFETP has been developed for each Air Force career field. These CFETPs serve as a basic road map for career progression and outline requirements that must be satisfied at critical career phase points. The civil engineering community has developed CFETPs for all enlisted and officer career fields. While enlisted CFETPs are mandatory, the officer CFETP is optional and has only been in existence since 1997.

Every civil engineer career field has a Career Field Manager (CFM) who manages the CFETPs, determines training requirements, and ensures implementation of training programs for the career field. The CE Officer and Civilian Career Field Manager is currently a civilian who operates out of the Air Force Civil Engineering Support Agency, Tyndall AFB. This person is responsible for both the officer and the civilian training programs. While the enlisted CFETPs are much more in-depth, and the process for updating and managing them is firmly established, officer training is much less developed. Overall, the officer CFETP is adequate as a quick reference guide, but it does not offer much in the way of contingency training guidance. For that we must go to other documents.

More detailed training requirements can be found in Air Force Instruction (AFI) 10-210, *Prime Base Engineer Emergency Force (BEEF) Program*. This instruction provides guidance on the overall Prime BEEF program, including how civil engineers should be postured and how they should prepare to deploy to a contingency. It offers a broader perspective of training requirements and focuses on functional area

responsibilities; Prime BEEF program objectives and requirements; and home station training philosophy, applicability, documentation, and equipment [16].

Another detailed guide is Air Force Pamphlet 10-219, Volume 10, titled *Contingency Training Guide and Task Standard*. This pamphlet addresses the typical major contingency and wartime tasks Air Force engineers could face and identifies the training programs associated with these tasks. It primarily focuses on functions and jobs that are not normally performed as part of the unit's peacetime operations. It lists what training should be conducted, who should receive the training, where the training can be obtained, and the required frequency of training [14].

The fourth document that provides training guidance is the *Commanders Procedural Guide: Obtaining Training in Support of EAF and Utilities Privatization* (Aug, 2000). The majority of this guide provides suggestions on how to obtain expeditionary engineer training in support of worldwide Expeditionary Aerospace Force (EAF) deployments. The goal of the EAF is to make deployments predictable, spread deployment requirements equitably among all personnel, and not deploy personnel more than once in a 15-month cycle. According to the *Procedural Guide*, the EAF does not add any new training requirements to an individual's air force specialty. In fact, the EAF concept should only require minor changes in the way that civil engineers currently deploy. That can only be true though, if people are trained at the proper level. As such, commanders and supervisors must ensure that their personnel are being adequately trained. Overall, this guide serves primarily as a quick reference on the EAF concept and how the civil engineer can proceed with training. It does not provide any additional requirements that CE officers must meet to be considered EAF deployable [18].

The last document, *Procedural Guide for Civil Engineer: A Guide to Civil Engineer Training* (June 1999), is designed to assist CE training managers with the development, implementation, and maintenance of their training programs [18]. The guide delineates the responsibilities of the civil engineer commander, unit training manager, supervisor, trainer, certifier, and trainee in various aspects of unit training.

A successful training program is an intricate part of meeting the Air Force Civil Engineer's wartime mission. The preceding documents provide a very good understanding of both the training process and the requirements necessary for CE officers to meet their contingency responsibilities.

Past Studies

There have been several studies related to Prime BEEF training as a whole that are relevant to this thesis effort and provide additional background information for conducting the current research. Each one of these is briefly discussed in the following paragraphs.

Kohlhaas and Williams. The primary objective of Capt Kohlhaas and Capt Williams' 1980 AFIT master's thesis was to determine if the current training requirements for CE Prime BEEF teams provided adequate and realistic training. Through a written questionnaire, 155 Air Force Base Civil Engineers, Operations Branch Chiefs, and Prime BEEF managers were surveyed about the adequacy of the Prime BEEF training program. Based on the feedback from these personnel, the researchers concluded that training requirements established at the time did not result in adequate or realistic training. Additional results of the research indicated that training was given a very low

priority relative to other CE work and that training efforts were being focused on tasks that the respondents determined to be least important in preparing for contingencies and wartime taskings [18].

Smith. In his 1984 AFIT master's thesis, Captain Emmit Smith examined the Air Force CE Prime BEEF Home Station Training program. Specifically, his study identified the amount and methods of Prime BEEF HST being conducted by civil engineer units through a questionnaire sent to Prime BEEF managers. The results showed that the typical Prime BEEF team member only spent an average of 50.23 hours per year (2.7 percent of an individual's potentially productive time) training in HST requirements. While there is no "right" amount of training, this relatively small amount of training suggests that contingency training was not perceived as a high priority [34:iv].

Morris. Captain William Morris' 1985 AFIT master's thesis examined Air Force Civil Engineer Prime BEEF members' perceptions of the adequacy of their contingency training. Both NCO and officer members of Prime BEEF teams stationed throughout the world were surveyed. The study sought opinions on: a) the adequacy of the training to support wartime and contingency taskings; b) whether or not current training programs were perceived to be established in the proper priority; c) the adequacy of the amount of hands-on training existing at the time; and d) the belief that Field 4 training at Eglin AFB (now known as Silver Flag training) provided adequate opportunities to practice the Prime BEEF mission. The results indicated that the majority of Prime BEEF members tended to agree that current contingency training was adequate. The officer/NCO comparison showed officers were more skeptical of the adequacy of the training in nearly every area considered. It must be noted that the questions were evaluating the overall

Prime BEEF program and were not necessarily centered on specific officer training [27:xii, 123-128].

Waggoner and Moe. The purpose of Capt Waggoner and Capt Moe's 1985 AFIT master's thesis was to identify, analyze, and record wartime and contingency problems experienced by Air Force civil engineers. Their research indicated that civil engineer problems of the past occurred and continue to occur because of technical deficiencies, economical limitations, political restrictions, and failure of civil engineer officers to properly learn and use lessons of the past to prepare for the future [36:vii].

Cannan. In 1988, while attending the United States Army War College, Lt Col David Cannan authored an individual study project entitled "Air Force Civil Engineering Wartime Training." It was noted in the paper that Air Force Civil Engineer is faced with the dilemma that assigned wartime taskings bear little resemblance to routine peacetime activities. As mentioned earlier, this was known as the "peacetime paradox." As quoted from Lt Col Cannan's paper, "With AF CE's warfighting capability dependent upon a force structure tasked with both peacetime and wartime duties, training becomes the centerpiece of the Prime BEEF concept" [4:12]. While pointing out the difficulties in maintaining necessary training to sustain civil engineers' wartime fighting capability, Lt Col Cannan postured that the increased use of Simplified Acquisition of Base Engineer Requirements (SABER) contracts would help ease the peacetime workload and allow more time to be spent on training for contingency missions. In his conclusion, Lt Col Cannan states, "Because of the similarity in peacetime and wartime tasks, Prime BEEF training is essential and must be expanded over current levels" [4:68]. To increase the credibility of the Prime BEEF program, Lt Col Cannan proposed that 25 percent of

available direct work hours should be used toward contingency training. This target was indicative of the magnitude of the perceived disparity between wartime training and peacetime duties [4:ii].

Gleason. The focus of Maj Donald Gleason's 1997 Air Command and Staff College research paper was to determine if Air Force civil engineers were being sufficiently trained for taskings they were performing across the full spectrum of operations, from war to missions other than war (MOOTW). While there were still some noted problem areas, he found that for the most part the engineers were very well prepared to meet their contingency missions. Even though the training was determined to be adequate, Maj Gleason still proposed eleven suggestions to Air Force CE leadership about increasing the quantity and improving the quality of contingency training in order to more fully prepare civil engineers for their contingency duties [21].

Lawrence. In his 1997 AFIT master's thesis effort, Capt Wade Lawrence examined the readiness training perception levels and task self-confidence of CE Prime BEEF personnel and investigated the relationships between these two constructs. Capt Lawrence sent surveys to CE personnel at eight different bases; of the respondents, there were only 39 officers. To bolster this number, an additional 20 officers were surveyed at the Silver Flag exercise site, to bring the total number of respondents to 59 officers. Since nearly three-quarters of the officers that responded were lieutenants and had limited training experience the study focused more on perceptions of the enlisted corps. One of the results from his analysis did indicate, however, that officers tend to have lower readiness training perception levels and task confidence than do enlisted personnel [25:xii].

It is clear from these previous studies that contingency training has been an important topic in the history of the Air Force. It should be noted that most of the previous research (except for Capt Lawrence's and Maj Gleason's) were conducted during the 1980's when the posture of the Air Force was much different. The Air Force was still under the Cold War umbrella in which operations tempo was lower; furthermore, personnel and training levels were higher. Since the Air Force has undergone several changes over the past few years (*i.e.*, EAF concept, more "peacetime and humanitarian" missions, and a renewed emphasis on outsourcing), it is time to take a closer look at officer contingency training. The common theme among the previous reports was that of looking at Civil Engineers as one entity. It is particularly interesting to note that no study has been dedicated to determining the adequacy of the *CE officer* training programs. Since the CE officer is expected to perform his/her duties in both peacetime and wartime scenarios, this research will look at the adequacy of the contingency training program for officers.

Training Program Evaluation

There are several components to an effective evaluation of a training program. One of the most comprehensive and widely referenced models of evaluation is Donald Kirkpatrick's in which four levels of training are identified: Reaction, Learning, Behavior, and Results [24]. While the intent of the current thesis is not to apply this model to CE officer contingency training, it is helpful to examine the concepts of the model since the respondents are asked to provide an evaluation of their training – in this case through the online survey. Kirkpatrick's model provides a basis for understanding

some of the underlying issues that should be considered when performing a training evaluation.

Level 1: Reaction. Reaction is the term that Kirkpatrick uses to refer to how well the participants liked a particular training program. The evaluation of participants' reactions consists of measuring their feelings; it is not a measure of any actual learning that takes place. Kirkpatrick states that reaction is easy to measure and nearly all training managers do it; but in their attempts they do not meet the following standards [24].

1. Determine what information is desired.
2. Use a written comment sheet with the items determined in the previous task.
3. Design a sheet so that reactions can be easily tabulated and quantified via statistical means.
4. Make the sheets anonymous in order to obtain honest reactions.
5. Encourage trainees to provide additional comments not covered by the questions designed to be tabulated and quantified.

Reaction is basically a measure of customer satisfaction. It is important because management often makes decisions about training based on participants' comments. Kirkpatrick also states that another reason for measuring reaction is to ensure that participants are motivated and interested in learning. If participants do not like the program, there is little chance that they will put forth an effort to learn. From an analysis of reactions, training managers can determine how well a program was accepted and obtain comments that will be helpful in improving future programs [24].

Level 2: Learning. Unfortunately, favorable actions do not assure learning, which is the second level of analysis in Kirkpatrick's evaluation process. Learning is a

measure of the knowledge acquired, skills improved, or attitudes changed due to training.

Generally, a training course accomplishes learning one or more of these levels. Some programs aim to improve trainees' knowledge of concepts, principles, or techniques.

Others aim to teach new skills or improve old ones, while others try to change attitudes.

Kirkpatrick states that it is important to determine objectively the amount of learning that takes place and has established the following guidelines for measuring learning [24].

1. Measure the learning of each trainee so that quantitative results can be determined.
2. Use a before-and-after approach so that learning can be related to the program.
3. As much as possible, the learning should be measured on an objective basis.
4. Where possible, use a control group (not receiving the training) to compare with the experimental group that receives the training.
5. Where possible, analyze the evaluation results statistically so that learning can be proven in terms of correlation or level of confidence.

Obviously, evaluation of learning is much more difficult to measure than reaction.

According to Kirkpatrick, knowledge of statistics is necessary when analyzing and interpreting the data for the results to be accurate and meaningful.

Level 3: Behavior. The third level of the training evaluation model is behavior.

This is a measure of the extent to which participants change their on-the-job behavior because of training; commonly referred to as transfer of training. Kirkpatrick contends that evaluation of training programs in terms of on the job behavior is more difficult than reaction and learning evaluations. He has suggested the following framework for evaluating training programs in terms of behavioral changes [24].

1. Conduct a systematic appraisal of on-the-job performance on a before-and-after basis.
2. The appraisal of performance should be made by one or more of the following groups: trainees, trainees' supervisors, subordinates, peers, and any others familiar with the trainees' on-the-job performance.
3. Conduct a statistical analysis to compare before-and-after performance and to relate changes to the training.
4. Conduct a post-training appraisal three or more months following so that the participants have an opportunity to practice what they learned. Subsequent appraisals may add validity to the study.
5. A control group of people who did not receive the training should be used.

Level 4: Results. The fourth level of the model is results. This is a measure of the final results that occur due to training that could include items such as increased sales, higher productivity, bigger profits, reduced costs, less employee turnover, and improved quality. According to Kirkpatrick, it is best to evaluate training programs directly in terms of desired results. Complicating factors can make that difficult, if not impossible, as it is hard to put a measure on certain items. On the other hand, some training programs are relatively easy to evaluate in terms of results, especially if the measured items are quantifiable (*i.e.*, when teaching typing, one can measure the number words per minute on a before-and-after basis) [24].

III. Methodology

This chapter describes the data collection method of web-based surveys used in this research and provides a brief background of the process used to develop an effective survey. Additionally, the population of interest and how it was selected are described.

Data Collection Method

Surveys are used to collect data on almost every conceivable subject [30:1]. A survey is a method of collecting information directly from people about their feelings, motivations, plans, beliefs, and personal, educational, and financial background [20:1]. Surveys can be in the form of personal interviews, telephone interviews, mail surveys, focus group meetings, and a relatively new Internet web-based version. This last method was chosen to do the current research on civil engineer (CE) officer contingency training. Because of its convenience, a web-based survey was deemed the appropriate data collection tool for this thesis, and the appropriate Internet link was emailed to civil engineer officers currently on active duty.

Numerous commentaries in scholarly journals have extolled the utility of the Internet for scientists and researchers [35]. One application of the technology that appears to have enormous potential for organizations is its use for organizational surveys [35]. Even though it is relatively new, there have been many studies comparing web-based survey formats to the traditional paper-based mail out versions [2; 32; 35]. The literature also contains several research papers that discuss the use of the Internet as a data gathering tool. One researcher, predicts that sophisticated web survey tool “... will

soon be in every survey researcher's arsenal, along with or even instead of analytical tools like SPSS... ” [33:11]. The common theme among the articles was that web-based data collection is a very viable means of doing research. It should also be noted that even though some of the referenced studies are only a few years old, the technological problems that were previously encountered have been fixed as the Internet has evolved. As with any data collection method though, web-based tools have advantages and disadvantages. A few of the more common ones are listed in Table 3-1.

Survey Population

The population of interest for this research was all civil engineer officers. With the ease and convenience of email and the Internet, the goal was to achieve as close to consensus as possible by contacting the approximately 1,445 personnel within this population. Therefore, a list of all civil engineer officers ranking from 2nd Lieutenant to Colonel was requested through the Air Force Institute of Technology (AFIT) registrar's office.

Table 3-1: Advantages and Disadvantages of Web-Based Surveys

ADVANTAGES	DISADVANTAGES
Internet-administered surveys can be extremely fast. After posting on a web site, thousands of responses can be obtained within a few hours.	Internet-administered questionnaires may present the disadvantage of lack of control over who responds.
Once set up is completed, there are practically no additional costs associated with this type of survey as it eliminates copying and postage costs.	Online surveys are especially vulnerable to duplication. People can respond multiple times, thus creating a kind of results bias.
Eliminates the need for data entry and data entry errors as responses can be sent directly to a data file.	Another disadvantage is related to platform and software compatibility issues. Not all potential respondents browsers can support the web-based HTML format.
Data file can then be imported into a spreadsheet for statistical analysis.	Note that there is no mechanism for random sampling of the population of web users.
Data entry requirements can be enforced by setting required field codes.	Non-response rates are harder to calculate.
Allows researchers to collect surveys from a larger and more geographically diverse population	The survey should be viewable from all common web browsers and easily readable from all monitor sizes.
Depending on server, access can be limited (i.e., .mil sites only) and passwords can also restrict the sample to a selected group.	Potential for survey server to experience technical problems.
Pre-notification and follow-up reminders can be easily accomplished.	No hard copy of data responses; everything is electronic.
Easier to complete for users; no need to mail back completed survey.	A final disadvantage of advanced Internet data collection is the up-front human cost of developing the software.
Electronic surveys offer better support for skip patterns (the ability to skip over entire blocks of questions based on previous answers).	
Online surveys can add a drop down list format that enhances the look of your web survey for questions with long lists of alternative answers	

[35]

Survey Development

Although web-based surveys are inexpensive and produce fast results, they still require proper project planning for maximum effectiveness. While the nomenclature varies slightly, most survey development authors describe several key steps for conducting a successful web survey [1; 30]. As shown in Figure 3-1, these steps include but are not limited to: define objectives, collect information, develop questionnaire, conduct survey; analyze results; and recommend course of action [8].

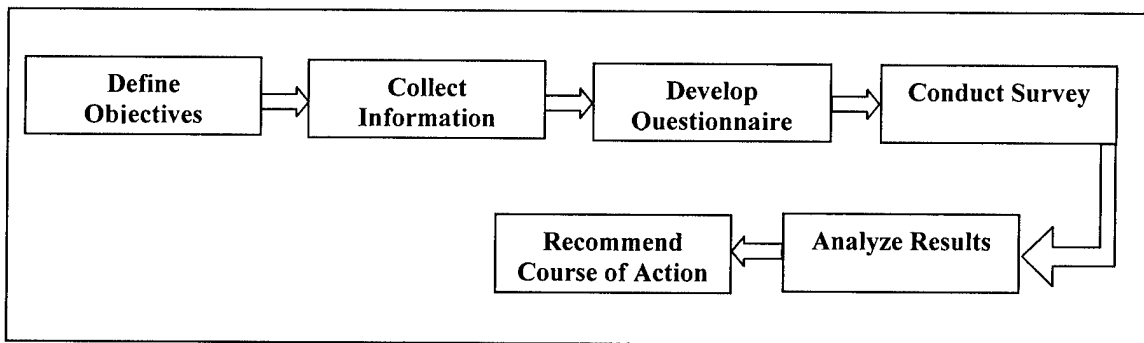


Figure 3-1: Survey Process Steps

Define Objectives. Regardless of the subject matter, all surveys are conducted to gather information relevant to a specific problem or situation. The key to a successful survey is to clearly define the research objective by asking, "What problem am I trying to solve?" [8]. The ideal objective is narrow in scope and can be clearly stated. As the scope expands, the survey becomes more complex and the results less meaningful. The focus of this thesis was developed by consulting with faculty in the Civil Engineer and Services School (CESS), members of the CE training section of Air Force Civil Engineer Support Agency (AFCESA), and the commander of the Silver Flag exercise site at Tyndall Air Force Base (AFB), Florida. After much iteration of specific training issues,

the main objective of the current research was narrowly focused on the perceived adequacy of CE officer training.

Collect Information. Once a research objective is defined, the information needed to achieve that objective must be collected. Since the objective in this research was to evaluate the adequacy of civil engineer officer training, information relating to the measure of that objective was necessary. For that reason, the four constructs shown in Table 3-2 were measured. Also of interest in this research was an evaluation of current contingency tasks being taught to the CE officer. Specifically, this research wanted to determine the relevancy of training tasks to the current civil engineer mission, as well the adequacy of the training being conducted. Once the required information was identified, past research (see Chapter 2) was examined to see if the data requirement might be met through an existing source. As expected, there was little to no information that measured the adequacy of civil engineer officer contingency training. Therefore, it was decided that a survey would be used to collect the necessary data.

Table 3-2: Survey Constructs

Construct	Statement
Quantity of Training	The amount of training offered is adequate to meet contingency mission requirements.
Realism of Training	The current contingency training is realistic.
Priority of Training	Contingency training has the correct priority.
Quality of Training	The quality of current contingency training is adequate to meet mission requirements.

Develop Questionnaire. Questionnaire development is where web-based surveys, often referred to as online surveys, can differ dramatically from their traditional paper-based brethren. Not only are the surveys easier and less expensive to build and distribute, but they are often less intrusive for respondents [8]. Like their traditional counterparts, web-based surveys allow a researcher to use a variety of question types. In addition, online surveys can use a drop down list that enhances the look of surveys for questions with long lists of alternative answers. Web-based surveys also offer better support for skip patterns (the ability to skip over entire blocks of questions based on previous answers) than paper counterparts.

The method chosen to distribute the contingency training survey was to send an email containing the survey Internet address as a hyperlink. Copies of the email message, and a subsequent follow up message are included in the Appendix A. During survey development, special attention was paid to the amount of time it took to display the survey on a remote browser. If it took too long to download, there was the potential for the respondent to abandon the survey before it was fully displayed in their browser. Consequently, there was minimal use of graphics and embedded components in the survey.

To capture the attention of potential respondents and encourage participation, the email message and the introductory page on the website included information that clearly stated the purpose of the research. The introduction also included contact, approval, and sponsorship information, as well as instructions on how to complete the survey and an estimate of how much time it would take. After the introduction page, the survey was divided into five sections (see copy of survey in Appendix A). In most cases, the first

couple of questions in each section asked for clarifying information to determine whether the respondent had to continue with the remaining questions in that particular section. The remaining questions were worded so respondents had to choose an answer based on a Likert scale.

Scales. The most common response option in surveys is an ordinal scale containing five to seven categories, with verbal labels anchoring the endpoints [30]. Named for psychologist Rensis Likert who was the first to study them, a Likert scale is a ranked list of responses that ranges from one extreme to another (strongly disagree to strongly agree). To be effective, Likert scales should always be balanced with the same number of negative and positive categories. There is some debate whether the scale should contain a neutral category or not. Mark Redelghier recommends that a neutral category not be included if the researcher wants to force respondents to make either a positive or negative evaluation [30].

For the first three sections of the survey used in this research, the option of no neutral item was chosen and resulted in the six-item scale shown in Figure 3-2. Note that a *Not Applicable* item was also included, since there was a chance that a question may not apply to every respondent. For the fourth section of the survey, the scales shown in Figure 3-3 were used. Note that there are two different scales because there were two separate questions asked about each training task.

1	2	3	4	5	6	N/A
Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable

Figure 3-2: Likert Scales (Used to measure SF, HST & CESS training)

Importance or relevance to mission				
Unimportant	Minor	Important	Very Important	Critical
1	2	3	4	5
Adequacy or Effectiveness of Current Training				
Terrible	Poor	Fair	Good	Excellent
1	2	3	4	5

Figure 3-3: Training Task Scales

Yea-sayers and Nay-sayers. An item of concern with any survey is that of *Yea-sayers* and *Nay-sayers*. Some people have a global tendency to agree or answer positively while others disagree or answer negatively. When an entire series of survey items or scales seek responses on a positive/negative dimension, yea-saying and nay-sayers may become a source of bias. To avoid this, the survey used in this research worded some statements positive and others negative for any given construct. This provided an automatic way of canceling out any potential bias effect [1:101].

Survey Sections. The first section of the survey included 18 questions regarding Silver Flag training provided to CE officers. The first question of the section simply determined when the respondent had last attended Silver Flag training. If the respondent had never attended the training, they were instructed to skip the remaining questions and go to the next section. If they had attended Silver Flag training (not including the one-week officer field education conducted during Mgt 101), the respondents were asked to answer the remaining questions. In the second section, 21 questions were asked regarding the contingency training that the officer was *currently* participating in during Home Station Training. The first three questions asked about current participation and time spent attending contingency training to establish the

perceived amount of time spent training in a given time period. The remaining 18 questions attempted to measure Home Station Training. The third section of the survey was worded to measure the adequacy of the training conducted at the CESS. The first question determined which contingency classes the respondent may have attended and the remaining 18 questions measured the training provided. In each of these first three sections, training was measured with the Likert scale presented earlier against constructs of Quantity, Quality, Priority, and Realism.

The fourth section of the survey requested information regarding current civil engineer training tasks. In this section, two separate questions were asked about each task; the first question was used to gauge the *importance or relevance* of the task to the overall CE contingency mission, and the second question was used to evaluate the *adequacy or effectiveness* of the current training for the task. There were a total of 45 tasks that were identified for evaluation in this section. The intent of this section was to provide decision makers with a comprehensive view of how each of the training tasks is perceived and to identify mismatches between mission importance and training adequacy. Additionally, if a task was identified in the survey as being unimportant to the mission by the respondents, but is considered highly important by the CE leadership, steps can be taken to remedy the disparity.

The last section of the survey gathered pertinent demographic information about the respondents. A remarks block was also included in this section for those respondents who wanted to provide additional comments.

Conduct Survey. Once the survey was developed, it was necessary to first conduct a pilot study. For this survey two different pilot studies were accomplished. The

first pilot study was done using a paper-based version of the survey, to obtain feedback on the survey format, wording of the questions, and clarity of the Likert scales. The pilot survey was given to 15 Civil Engineer officers enrolled in the AFIT Graduate Engineering and Environmental Management program. From their responses, several format and wording problems were identified and fixed. The second pilot study was subsequently done after transferring the survey to a web-based format. This pilot was tested with approximately 20 different CE officers attending AFIT. In addition to survey format and question wording, this pilot study also verified that the computer hardware and software were working properly.

Once it was verified that the web-based survey was working properly, the introductory message and web-link were emailed to the sample population. Unfortunately, this was not as easy as expected. The Air Force Personnel Center (AFPC) does not maintain a current database of email addresses for Air Force personnel. Therefore, the standard Air Force nomenclature of *firstname.lastname@base.af.mil* was used as the default email address. The steps followed to email the web-based survey are included in Appendix A, Table A-1.

Analyze Results. Unlike traditional survey techniques, the online nature of web surveys made it possible to process results without human intervention. Results were received in electronic format and were automatically transferred to an Access database. Once in the database, the results were manipulated with a variety of tools, including statistical packages, spreadsheets, and presentation programs. After determining the usable responses, an analysis of the data was accomplished using Statistical Product and Service Solutions (SPSS) and Excel software. The first part of the analysis used

descriptive statistics to provide a set of graphs and tables with accompanying text for each of the demographic questions. The second part of the analysis was much more in-depth and involved statistical manipulation and data recoding. As discussed previously, responses to the specific constructs were scored with a Likert scale and statements were worded to avoid the yea-sayer/nay-sayer effect. Table C-4 in Appendix C shows the relationship between each construct and how each statement was worded (positively or negatively). To accomplish the analysis, the negatively worded questions were reverse-scored so that comparisons could be done. The Training Tasks section does not need to have any of its responses reverse scored, as there were no negatively worded statements. Therefore, the analysis was accomplished by comparing the mean score of the relevancy question to the mean score of the training effectiveness question. Significant differences will be identified as areas for training managers to look at more closely. For instance, if a task such as Host Nation Support is deemed to be very relevant (high score on the relevancy question) but the training effectiveness is scored low, this would indicate that more training may be necessary on that topic. On the other hand, a task may be deemed as having little mission importance but be considered to have high quality training. This scenario would indicate that it may be possible to reduce the amount of training time spent on that task. Even so, the decision to reduce training on certain tasks needs to be made at the policy making level, and not at the base level.

Analysis of responses was also accomplished using a summated scale process, which is a method of combining several items that measure the same concept into a single variable in an attempt to increase the reliability of the measurement across respondents[22]. In this context, reliability is the extent to which a variable or set of

variables is consistent with what it is intended to measure [22:90]. If multiple measurements are taken, reliable measures should all be very consistent in their values.

In most cases when using summated scales, the separate variables are summed and their total or average score is used for analysis in a process referred to as *factor analysis*. Factor analysis is a statistical approach used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors); the objective is to find a way of condensing the information contained in the original variables into a smaller set of variants (factors) with a minimal loss of information [22].

For this research, each of the statements (variables) that described the constructs of Quantity, Realism, Priority and Quality were combined into a single factor (*i.e.*, the three statements relating to the quantity of Home Station Training were combined into one measure). Rather than simply assuming that the proposed statements (listed in Table C-4) were actually all describing or *loading* against the underlying constructs, SPSS was used to verify the proposed relationships.

After performing factor analysis, it is possible that the new composite variables created by summing individual variables may not represent a reliable measure. It is quite possible that one or more questions may not load very well against the intended construct. Since no single item is a perfect measure of a concept, a series of methods to assess the internal consistency must be used. First, there were several measures relating to each separate item, including the item-to-total correlation (the correlation of the item to the summated scale score) or the inter-item correlation (correlation among items). Rules of thumb suggest that item-to-total correlations exceed 0.50 and inter-item correlations

exceed 0.30 for consistent measures [22:119]. The second method of measure is the reliability coefficient that assesses the reliability of the entire scale, with Cronbach's alpha being the most widely used measure. A guideline often used is to require alpha to be 0.70 or greater, although this is an approximate value and not set in stone. For exploratory research, such as this study, the Chronbach alpha could be as low as 0.60 [30].

Recommend Course of Action. The last step of the process is to recommend a course of action based upon the results of the data analysis that is consistent with the original objectives of this research. When providing recommendations, it is important to remember that the survey results are only one tool that can be used when Air Force leaders are dictating training policy. While surveys provide a very good perspective of what is happening "in the field," there are other issues affecting training policy of which the average civil engineer officer may not be aware.

IV. Analysis

This chapter provides the results from the statistical analysis of the survey responses. General demographics are presented first, followed by a brief discussion on significance levels. The analysis of the responses to Silver Flag Training, Home Station Training, and Civil Engineer and Services School Training are then presented. The next portion of the chapter evaluates each of the training tasks for importance to mission and the adequacy of task training. The last section determines if there were any significant differences in how the respondents of different rank and deployment experience answered the survey questions.

General Demographics

Table 4-1 summarizes the response rate, how many surveys were discarded, and ultimately how many were used in the analysis. Duplicates were recognized when two back-to-back responses had exactly the same responses to all questions, including the wording in the remarks section. There were 584 respondents, which equates to a 52.76 percent (584/1107) response rate. From the valid responses, there were eight discarded due to missing demographic information (rank). Another 22 were unused since the respondent was a second lieutenant with less than six months at their current duty location, rendering them unable (in the opinion of the author) to adequately assess the adequacy of their contingency training. Overall, this resulted in a total of 554 responses that were used for the analysis portion of this thesis, a usable response rate of 50.0 percent.

Table 4-1: Survey Participation Results

Total Number of Emails Sent Out	1445
Total Undeliverable Emails	(338)
Total Deliverable Emails	1107
Total Responses	623
Unusable: Lack Response	(20)
Unusable: Duplicates	(15)
Unusable: Respondent not an officer	(4)
Total Number of Valid Responses (52.8% response rate)	584
Ineligible: Missing demographic data (rank)	(8)
Ineligible: 2Lt w/less than 6 months active duty time	(22)
Final Usable Response Rate (554/1107)	50.0%

Table 4-2, based on total number of valid responses (584), provides the results of the demographics section in regards to rank; this provides a limited insight into the background of the survey respondents. The table shows that the response rate was fairly uniform across the ranks, with captains providing the most total responses (207) and the highest response rate (58.31 percent). It is interesting to note that the response rate by rank matches up well with the overall percentage of the career field in each rank category, indicating that the results are not skewed.

Figure 4-1 is a graphical representation of the usable responses based on rank. Further breakdown of responses to each of the demographic questions (*i.e.*, major command, level, flight, etc) can be found in Appendix B. Of particular interest in this study was the breakdown of respondents by deployment experience as shown in Figure 4-2. Out of the 554 responses, 347 had either been to a combat type deployment, a non-

combat type deployment, or had participated in both types of deployment. This is in comparison to the 207 individuals who had no deployment experience at all.

Table 4-2: Response Rate by Rank

Rank	Total in Career Field ¹		Number receiving survey	# Valid Responses to survey	Overall Response Rate by Rank ²	# Usable Responses ³	
	Total #	Percent				Total #	Percent
2Lt	224	15.98%	189	86	45.50%	65	11.73%
1Lt	175	12.48%	138	79	57.25%	79	14.26%
Capt	490	34.95%	355	207	58.31%	206	37.18%
Maj	220	15.69%	197	98	49.75%	98	17.69%
Lt Col	223	15.91%	177	78	44.07%	75	13.54%
Col	70	4.99%	71	31	43.66%	31	5.60%
Other	--		--	8	--	--	--
TOTAL	1402		1107	584	52.76%	554	--

¹From AFPC websearch: <http://www.afpc.randolph.af.mil> (30 Sep 00). This number varies slightly with the total number of emails sent out (1445); difference is due to changes in # of personnel between initial query and when survey sent. Percent column example (224/1402 = 15.98%)

²Based on the number of responses vs number receiving survey (*i.e.*, 86/189 = 45.5%)

³30 additional responses were deemed unusable due to other factors; Percent column example (65/554=11.73%)

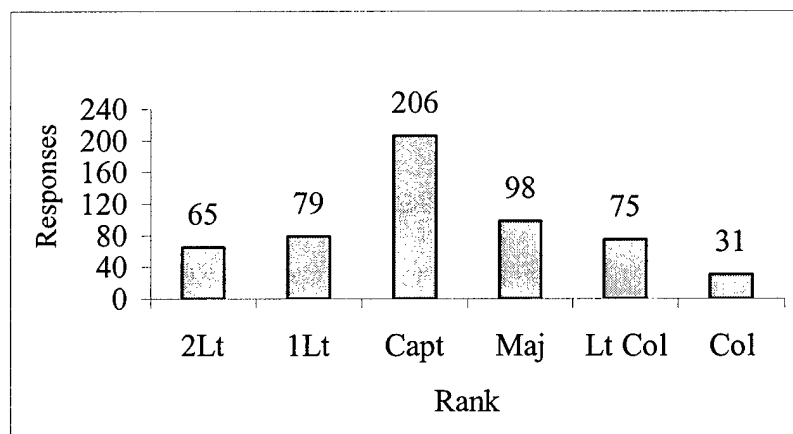


Figure 4-1: Usable Survey Response by Rank

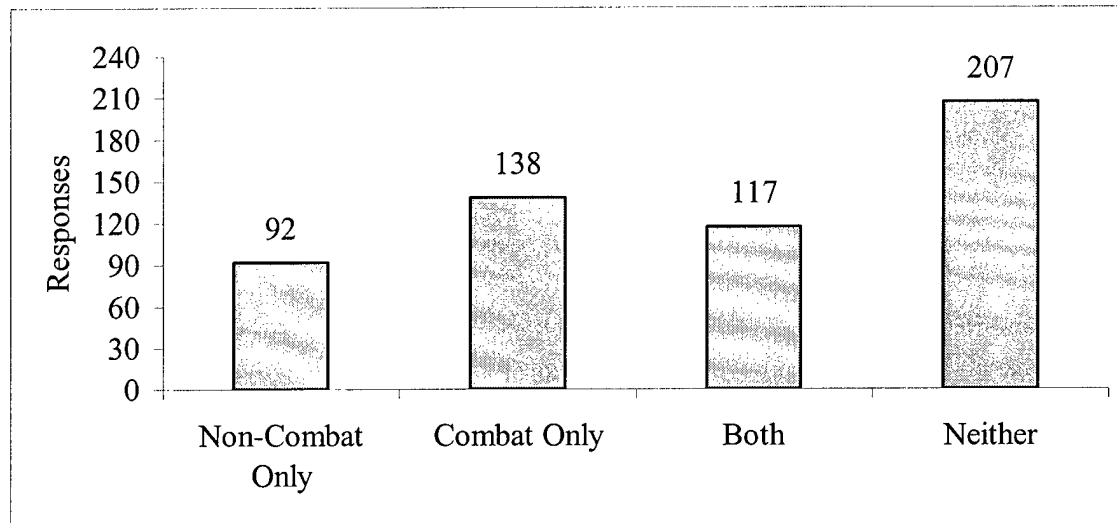


Figure 4-2: Deployment Responses

Significance Levels

To assess if there was any significant difference between the calculated values for the different groups, one-way analysis of variance (ANOVA) tests were conducted that included a Bonferroni post-hoc test. Significance is defined as the probability that the magnitude of the relationship might result in a sample of that size purely from sampling error if, in fact, it did not exist in the population [1:455]. In other words, significance is the likelihood that the differences between the two measurements is caused by sampling variation and is not an actual difference. Significance values range anywhere from zero to one. The closer to one a value is, the more likely the difference is caused by sampling errors.

For the purposes of this research, an acceptable cut-off value of 0.05 was used [22:330]. If a significance value is less than 0.05, then the difference being measured was deemed statistically significant. Another way of stating this is that there is a 95

percent chance that the difference was not due to error, but rather that the differences between group responses were attributable to actual differences in group responses rather than sampling error. If it is over 0.05, the differences are more likely due to inherent sampling errors. As such, throughout the rest of this analysis, a significance level of 0.05 is used.

Even though something is deemed *statistically* significant, it is important to point out that differences in responses may not be *practically* significant. For example, there may be a statistical difference between two scores (*i.e.*, 3.51 and 3.58), but for all practical purposes that difference is not significant. Decision makers need to utilize their personal judgment when determining if there should be cause for concern because of a large difference in scores. The significance column in the tables throughout this analysis should be used more as a first indication of potential problems and not as concrete proof that things need to change.

Silver Flag Analysis

The first question in the Silver Flag training program portion of the survey requested information on the last time the individual had attended Silver Flag training. The responses indicated that 320 officers have attended Silver Flag training at least once, while 192 officers have never attended. This is reflected in Figure 4-3.

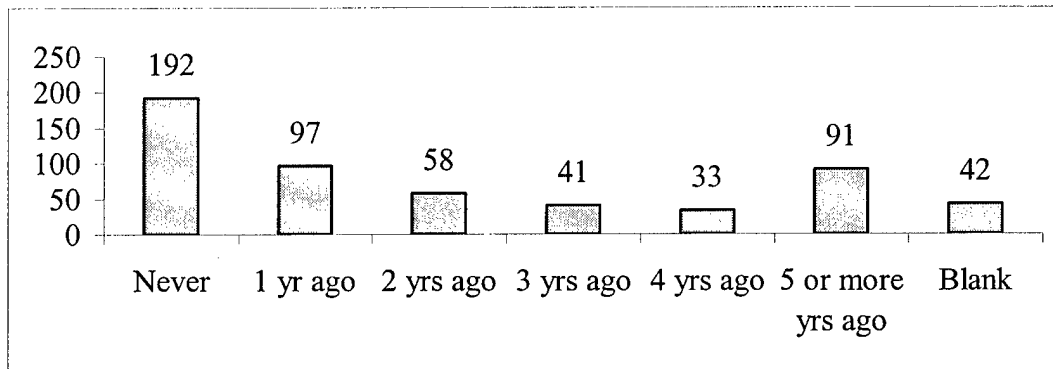


Figure 4-3: Silver Flag Training Attendance Responses

Table 4-3 presents a breakdown by rank of when Silver Flag (SF) training had last been attended. From this table, we can see that many CE officers (34.7 percent) have never attended Silver Flag training and only 28 percent have been to the training within the last two years. Of particular note is that 70 captains have never been to SF. This is a potential area for improvement as captains are some of our most deployable personnel.

Recall that there are four constructs of interest being measured: Quantity, Realism, Priority, and Quality. As discussed in the methodology chapter, several of the responses to survey statements were reverse scored. Once this was accomplished, the survey statements that were created to measure each of these constructs were evaluated for reliability. Table 4-4 shows the relationship between the construct and the survey statements.

Table 4-3: Breakdown of Responses to SF Training

	Never	1 yr ago	2 yrs ago	3 yrs ago	4 yrs ago	5 or more yrs ago	Blank	Total
2 Lt	45	18	0	0	0	0	2	65
1 Lt	37	21	15	1	0	0	5	79
Capt	70	35	24	21	16	21	19	206
Major	16	10	7	11	9	36	9	98
Lt Col	9	13	11	6	5	24	7	75
Col	15	0	1	2	3	10	0	31
Total	192	97	58	41	33	91	42	554

Table 4-4: SF Construct and Statement Description

Construct	#	Silver Flag Statement
Quantity	1c	Eliminated: I should be attending Silver Flag more often to hone my contingency skills.
	1g	The length of contingency training conducted at Silver Flag (1 week) is sufficient to prepare me for my contingency missions.
	1k	The amount of contingency training that Silver Flag provides is enough to prepare me for my contingency missions.
Realism	1d	The contingency training conducted at Silver Flag does not apply to the required tasks I will perform during a contingency.
	1i	The skills that I am taught at Silver Flag are relevant in meeting my contingency responsibilities.
	1j	The officer training curriculum at Silver Flag is training me on the wrong skills to meet my contingency requirements.
	1l	The contingency training I receive while at Silver Flag is appropriate for what I would do during a contingency.
	1m	The contingency training I receive at Silver Flag is very realistic.
	1p	The scenarios used for contingency training at Silver Flag are not very realistic.
Priority	1b	Civil Engineer unit's place a high emphasis on completing all Silver Flag pre-requisite planning and training tasks prior to attending training at Silver Flag.
	1e	Eliminated: More emphasis should be placed on Silver Flag training.
	1n	Preparing and attending Silver Flag training is not a high priority at base level.
	1q	Adequate time is made available to complete the Silver Flag pre-requisite training.
Quality	1f	The contingency training I receive at Silver Flag needs improvement.
	1h	Overall, training conducted at Silver Flag has better prepared me to perform my contingency duties
	1o	I am satisfied with the quality of contingency training I receive at Silver Flag.
	1r	Overall, Silver Flag training has not contributed to preparing me for my assigned contingency duties

Silver Flag Reliability and Factor Analysis. The initial reliability checks resulted in two statements being eliminated from the analysis, specifically 1c and 1e due to their low Chronbach alpha values (less than 0.50). After removing these from the analysis, reliability tests were reaccomplished and all constructs were found to be acceptable, as shown in the Table 4-5. As described in the methodology chapter, a Chronbach alpha score is used to determine the reliability of the measures. In this case, all constructs have an alpha that is over 0.6, which is acceptable for exploratory research.

Table 4-5: SF Reliability Measure

Construct	Cronbach Alpha
Quantity	0.644
Realism	0.844
Priority	0.614
Quality	0.810

The next portion of the analysis was done using factor analysis. The factor analysis results were not as definitive as anticipated. While Quantity and Priority emerged as separate factors, Realism and Quality were virtually indistinguishable from each other (see Appendix C, Table C-1). The way the statements “loaded” against a factor could be due to several reasons, such as a small number of responses, low Chronbach alpha values, or the possibility that Quality and Realism may be sub-factors of some other overarching construct. Even though the factor analysis did not distinguish between the Realism and Quality, this thesis will still make a distinction between them

and treat Realism and Quality as two separate constructs for the remainder of the analysis.

Silver Flag Results. After performing reliability checks and factor analysis, the individual statements that comprised each of the constructs were combined to create four overall mean Likert scale scores. These scores are portrayed in Table 4-6, with scores provided for each rank and then a final overall score.

Table 4-6: Silver Flag Results

Construct	2Lt		1Lt		Capt		Major		Lt Col		Col		Overall
	Score	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Quantity	3.650	20	4.122	37	3.640	114	3.921	70	4.131	61	4.094	16	3.876
Realism	4.886	19	4.505	37	4.164	113	4.429	66	4.807	58	4.619	14	4.449
Priority	4.140	19	4.048	35	3.552	110	3.831	63	4.082	57	4.375	16	3.850
Quality	4.868	19	4.480	37	4.136	114	4.477	65	4.692	60	4.750	15	4.431

Note: N indicates number of responses

Using a post-hoc test, it was determined that there was a significant difference (at the 0.05 level) between the captains and some of the other officer ranks as displayed Table 4-7. Of particular note is that scores for captains were consistently lower for all four constructs, as shown in Figure 4-4. This indicates that, overall, captains do not rate Silver Flag training as high as other officers. This may be an area of concern, as captains make up approximately 35 percent of the entire civil engineer officer career field. Additionally, of the 347 personnel who have deployed, 153 of them were captains, indicating that they have a good deal of experience in the field with which to judge their contingency training.

Table 4-7: Silver Flag Significant Differences

Construct	Rank 1 - Rank 2		Difference	Significance
Quantity	-	-	-	-
Realism	Capt	2 Lt	-0.722	0.006*
	Capt	Lt Col	-0.644	0.000*
Priority	Capt	Lt Col	-0.530	0.019*
		Col	-0.823	0.034*
Quality	Capt	2 Lt	-0.732	0.017*
		Lt Col	-0.556	0.002*

*Significant (0.05 level)

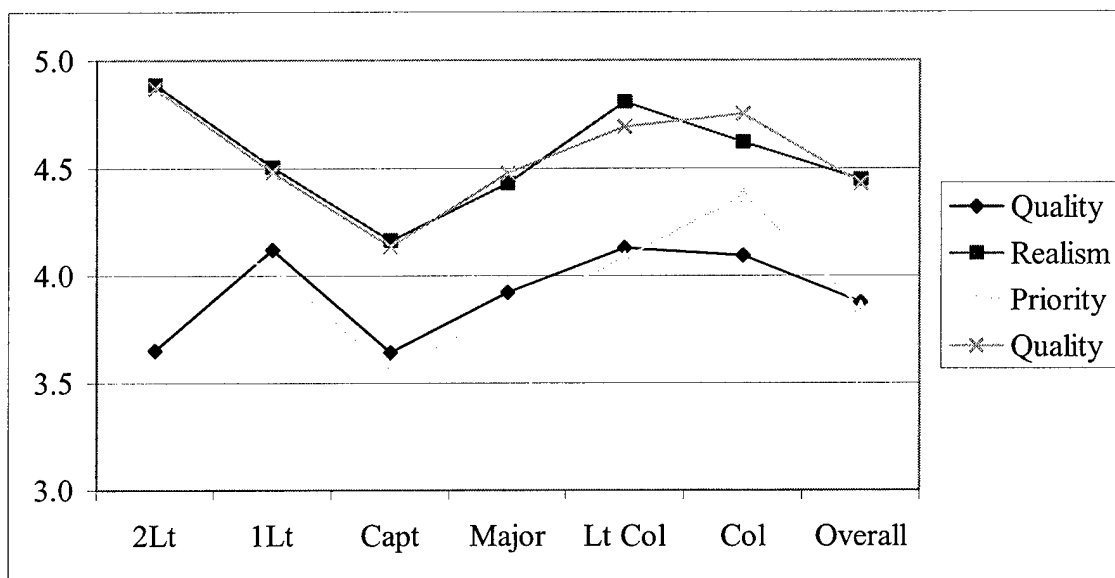


Figure 4-4: SF Score Comparison by Rank

Silver Flag – Deployed vs Non-Deployed. A second comparison was accomplished using the Silver Flag data between personnel who had deployed versus those who had not. In this analysis, a distinction between a combat and non-combat deployment was not made; the responses were only treated as either deployed or not

deployed. Table 4-8 shows the respective mean scores for the four constructs. There were no significant differences between the two groups; both deployed and non-deployed personnel rated the Silver Flag training in the same way.

Table 4-8: Deployed vs Non-Deployed Silver Flag Results

Construct	Deployed	N	Not Deployed	N	Difference	Significance
Quantity	3.882	228	3.861	90	0.020	0.883
Realism	4.406	219	4.557	88	-0.151	0.157
Priority	3.816	214	3.934	86	-0.118	0.368
Quality	4.389	222	4.537	88	-0.148	0.204

*Significant (0.05 level)

Note: N indicates number of responses

Home Station Training Analysis

The first three questions in the Home Station Training (HST) portion of the training survey requested information on current participation in current duty home station training programs. There were a total of 270 personnel who participated in their HST programs, 254 who did not participate, and 30 who did not answer (Figure 4-5). The high number of personnel not participating in HST can be attributed to the fact that 31 percent of the total respondents were in staff level positions that do not require home station training. The remaining analysis on HST was conducted using only the 270 respondents who indicated they did participate in HST at their current duty location. It should be noted that not all respondents answered all questions in the section, thus the number of responses for each statement was not always 270. Further tables and figures can be found in Appendix D.

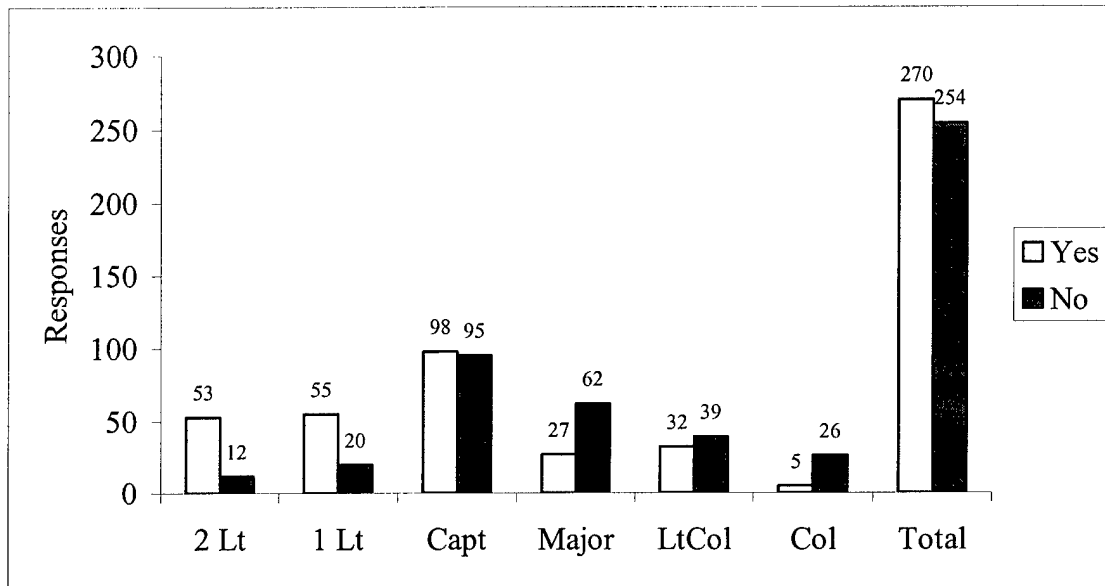


Figure 4-5: HST Participation

The next two questions in the HST section tried to gauge how much time was spent performing HST contingency training on a monthly basis, as well as to what extent the individual's normal day-to-day job resembled tasks that would be encountered during a contingency deployment. This is graphically displayed in Figures 4-6 and 4-7.

From these figures it can be seen that a majority (71 percent) of the personnel participate in eight or less hours of contingency training per month. Additionally, 57 percent (154) of the respondents indicated that less than 10 percent of their normal day-to-day duties resemble contingency tasks in any given work week. While there is no set amount of time that is dictated by regulation, it is clear that there may be some room for improvement in these two areas.

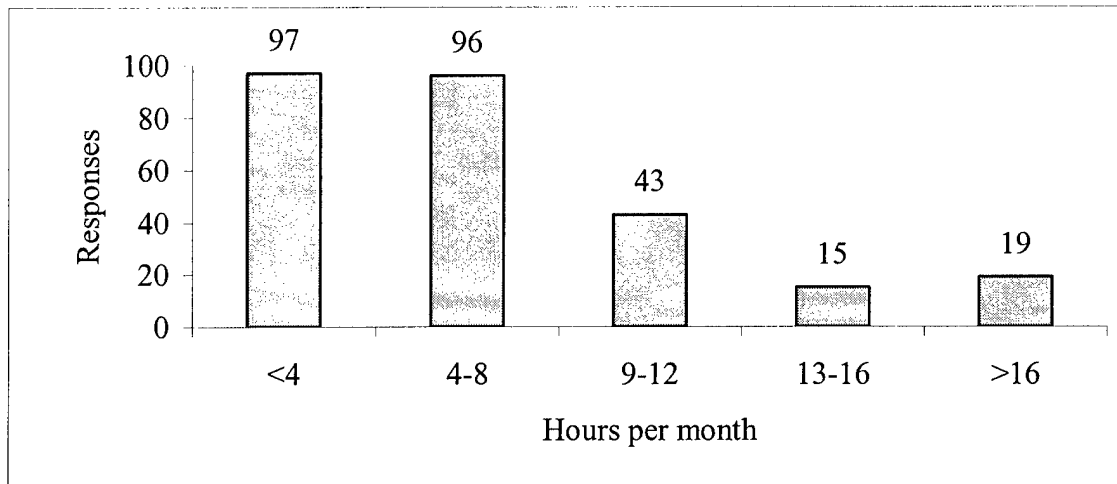


Figure 4-6: HST Contingency Training (hrs/month)

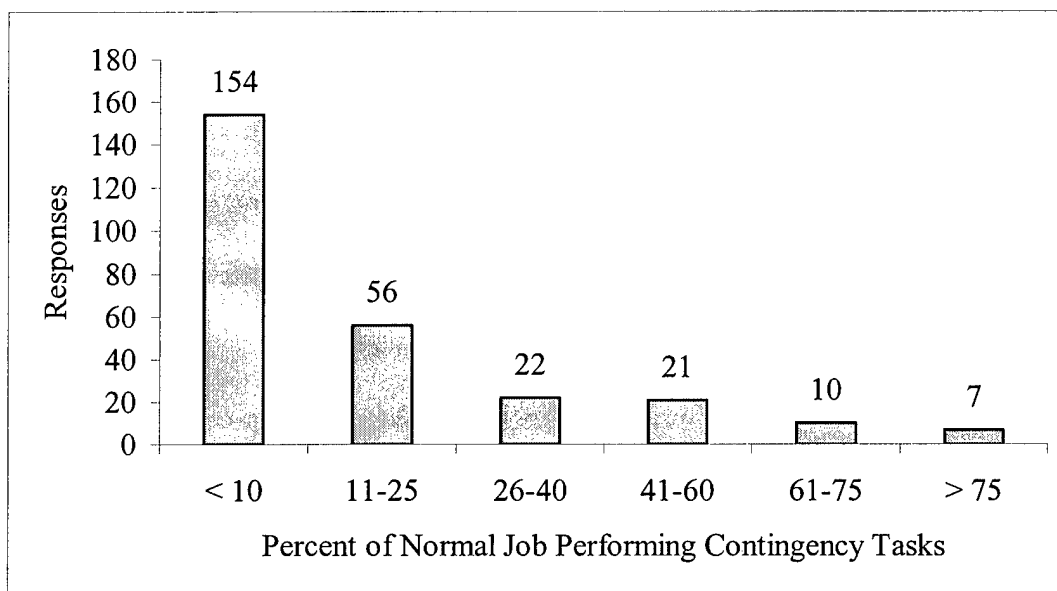


Figure 4-7: Performance of Contingency Tasks During Peacetime Duties

The four constructs of Quantity, Realism, Priority, and Quality were also evaluated for Home Station Training. Table 4-9 details the statements that correspond to each construct.

Table 4-9: HST Construct and Statement Description

Construct	#	HST Statement
Quantity	2d	The amount of contingency training that I receive through home station training is enough to prepare me for my contingency missions.
	2m	The amount of contingency training that I receive at my current duty location is insufficient to meet my contingency responsibilities.
	2s	I should be receiving more training at my home station to hone my contingency skills.
Realism	2e	The scenarios used for home station contingency training are not very realistic.
	2f	The skills that I am taught at home station are appropriate for meeting my contingency responsibilities.
	2j	The home station contingency training I receive is appropriate for what I might need during a contingency deployment.
	2l	My unit's home station contingency training curriculum is focused on the wrong things to meet my contingency requirements.
	2n	The home station contingency training I receive is very realistic.
	2p	The home station contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.
Priority	2g	Contingency training is one of our squadron's highest priorities.
	2i	The amount of time I spend on my normal peacetime mission and taskings does not leave enough time for adequate contingency training.
	2o	Compared to other CE requirements at my current base, contingency training receives lower priority.
	2t	Adequate time is made available at my current duty station to complete my contingency training requirements.
Quality	2h	My home station contingency training program is very good.
	2k	Overall, home station contingency training conducted at my current duty station adequately prepares me to perform my contingency duties.
	2q	I am satisfied with the quality of home station contingency training I receive.
	2r	The home station contingency training I receive needs improvement.
	2u	Overall, home station contingency training does not adequately prepare me for my assigned contingency duties.

Home Station Training Reliability and Factor Analysis. The initial reliability checks were all very good and did not result in any statements being eliminated from the analysis. The Chronbach alpha scores listed in Table 4-10 have acceptable values over the minimum of 0.6, with all of them being over 0.8, indicating high reliability.

Table 4-10: HST Reliability Measure

Construct	Cronbach Alpha
Quantity	0.810
Realism	0.844
Priority	0.829
Quality	0.932

Factor analysis on HST statements was very inconclusive. Priority was the only construct that clearly emerged using this type of analysis (See Appendix C, Table C-2). The other statements did not specifically emerge as expected and cross-loaded in a manner that did not show clear separation between the constructs. Similar to the Silver Flag statements, the way the statements “loaded” against a certain factor could be due to several reasons, such as the small number of responses or the possibility that the constructs of interest were all sub-factors of some overarching construct. Therefore, the original statements were retained as-is and combined to form overall constructs of Quantity, Realism, Priority, and Quality.

Home Station Training Results. The construct scores are portrayed in Table 4-11, with values provided for each rank and then a final overall score. To determine if there was a significant difference between the calculated values for the different ranks, a one-

way analysis of variance (ANOVA) test was conducted that included a Bonferroni post-hoc test. The post-hoc test allowed us to determine that there was no significant difference (at the 0.05 level) between any of the ranks.

Table 4-11: Home Station Training Results

Construct	2Lt		1Lt		Capt		Major		Lt Col		Col		Overall
	Score	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Quantity	2.889	51	2.951	54	3.021	97	3.551	26	3.152	33	4.200	5	3.071
Realism	3.396	48	3.537	49	3.667	90	4.039	26	3.750	32	4.400	5	3.653
Priority	4.203	46	4.333	53	3.879	96	4.547	25	4.271	32	5.733	5	4.180
Quality	3.215	52	3.142	52	3.188	96	3.920	25	3.490	31	4.760	5	3.320

Note: N indicates number of responses

HST – Deployed vs Non-Deployed. A second comparison was accomplished using the Home Station Training data between personnel who had deployed versus those who had not. As in the SF analysis, a distinction between personnel who deployed to a combat or non-combat deployment was not made; the responses were treated as either deployed or not deployed. Table 4-12 shows the respective mean scores for the four constructs. There was a statistically significant difference in the mean quantity construct scores between the two groups. Personnel who had deployed rated the quantity of training received just slightly higher than those that did not deploy. From a practical standpoint, the difference is probably not significant as there is only a 0.3 (3.2-2.9) difference between the two groups.

Table 4-12: Deployed vs Non-Deployed HST Results

Construct	Deployed	N	Not Deployed	N	Difference	Significance
Quantity	3.192	160	2.890	106	0.302	0.046*
Realism	3.736	153	3.522	97	0.214	0.093
Priority	4.172	157	4.193	100	-0.021	0.919
Quality	3.392	157	3.212	104	0.181	0.249

*Significant (0.05 level)

Note: N indicates number of responses

Civil Engineer and Services School Analysis

The first question in the CESS section of the survey requested information on which classes the respondent had attended. There were a total of 464 respondents who had attended Mgmt 101 or Mgmt 585, or both, and only 60 who had not attended either. There were 21 respondents who indicated that they had only attended the Mgmt 585 course. Even though the normal course sequence for civil engineers is to attend Mgmt 101 and then Mgmt 585, these responses were included since most of these 21 responses were from senior ranking individuals who indicated that they had attended Mgmt 101 (or its equivalent) so long ago that they felt they could not adequately evaluate the Mgmt 101 course. Figure 4-8 shows the total breakdown of CESS attendance responses.

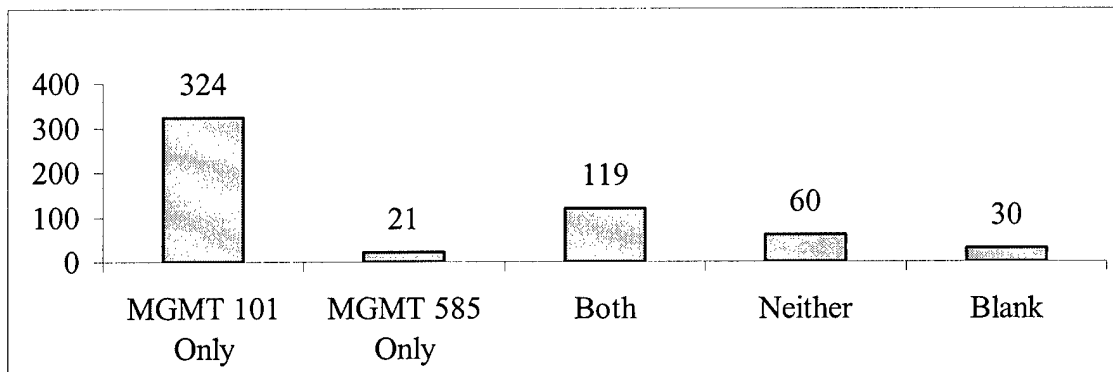


Figure 4-8: CESS Attendance Responses

The four constructs of Quantity, Realism, Priority, and Quality were also evaluated for CESS. Table 4-13 details the statements that correspond to each construct.

Table 4-13: CESS Construct and Statement Description

Construct	#	CESS Statement
Quantity	3b	The number of contingency training courses that CESS provides is enough to prepare me for my contingency missions.
	3d	CESS contingency courses offered (<i>i.e.</i> , MGMT 101 and/or MGMT 585) are sufficient to prepare me for my contingency missions.
	3e	CESS should offer an additional contingency course to better prepare me to meet my contingency missions.
	3n	There should be more contingency training classes taught at CESS to help hone my contingency skills.
	3q	There is too big of time span between MGMT 101 and MGMT 585 (approximately 7 years).
Realism	3h	The scenarios used for contingency training at CESS are not very realistic.
	3j	The CESS contingency training I receive is appropriate for what I might need during a contingency.
	3k	CESS contingency course lesson plans are focused on the wrong skills to meet my contingency requirements.
	3l	The CESS courses are training the correct material to meet my contingency requirements.
	3o	The CESS contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.
	3s	The contingency training I receive at CESS is very realistic.
Priority	3c	Adequate time is/was made available to prepare me to attend CESS contingency classes.
	3i	My unit places a high emphasis on sending CE officers to CESS contingency courses.
	3m	Attending CESS contingency courses is/was a high priority at my base.
Quality	3f	The contingency training I receive at CESS needs improvement.
	3g	Overall, CESS training does not adequately prepare me for my assigned contingency duties.
	3p	I am satisfied with the quality of contingency training I receive at CESS.
	3r	Overall, training conducted at CESS adequately prepares me to perform my contingency duties.

CESS Reliability and Factor Analysis. The initial reliability checks were all very good and did not result in any statements being eliminated from our analysis. The Chronbach alpha scores, listed in Table 4-14, have acceptable values over the minimum of 0.6, with all of them being over 0.7, indicating high reliability.

Table 4-14: CESS Reliability Measure

Construct	Cronbach Alpha
Quantity	0.844
Realism	0.875
Priority	0.778
Quality	0.841

The CESS factor analysis was fairly conclusive. Priority and Quantity constructs emerged, while Quality and Realism once again loaded together. As with the SF constructs, the initial statements were retained and combined to form the four combined constructs of Quantity, Realism, Priority and Quality.

CESS Results. The construct scores are portrayed in Table 4-15, with values provided for each rank and then a final overall score.

Table 4-15: CESS Results

Construct	2Lt		1Lt		Capt		Major		Lt Col		Col		Overall
	Score	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Quantity	2.763	43	2.848	63	2.980	171	3.306	79	3.095	44	3.933	9	3.033
Realism	3.928	51	4.005	66	3.959	173	4.276	78	4.293	41	4.907	9	4.075
Priority	4.101	56	4.020	66	4.024	170	4.470	78	4.561	44	4.933	5	4.184
Quality	3.625	58	3.842	68	3.701	174	4.000	80	3.949	44	4.639	9	3.813

Note: N indicates number of responses

To determine if there was a significant difference between the calculated values for the different ranks, a one-way analysis of variance (ANOVA) test was conducted that included a Bonferroni post-hoc test. The post-hoc test allowed us to determine that there was some significant difference between several of the different ranks. These differences are shown in Table 4-16, with the majority of the differences being between colonels and lower ranking officers. Significance is indicated, at both the 0.05 and 0.01 levels. To recall, significance is the likelihood that the differences between the two measurements is caused by sampling variation and is not an actual difference. Significance values range anywhere from zero to one. The closer to one a value is, the more likely the difference is caused by sampling errors. In this case, the 0.01 significant value indicates that there is a 99 percent chance the difference was not caused by sampling error but is a true difference.

Table 4-16: CESS Significant Differences

Construct	Rank 1 - Rank 2		Difference	Significance
Quantity	Col	2 Lt	1.171	0.041*
Realism	Col	2 Lt	0.979	0.012*
	Col	1 Lt	0.902	0.025*
	Col	Capt	0.949	0.009**
Priority	Capt	Major	-0.447	0.049*
Quality	Col	2 Lt	1.014	0.036*
	Col	Capt	0.938	0.049*

*Significant (0.05 level); ** Significant (0.01 level)

CESS – Deployed vs Non-Deployed. A second comparison was accomplished using the CESS data between personnel who had deployed versus those who had not. As in the previous analyses, a distinction between personnel who deployed to a combat or

non-combat deployment was not made; the responses were treated as either deployed or not deployed. Table 4-17 shows the respective mean scores for the four constructs. There were no significant differences between the two groups; both deployed and non-deployed personnel rated the CESS training in the same way.

Table 4-17: Deployed vs Non-Deployed CESS Results

Construct	Deployed	N	Not Deployed	N	Difference	Significance
Quantity	3.100	268	2.906	141	0.194	0.083
Realism	4.096	272	4.035	146	0.061	0.474
Priority	4.222	264	4.118	155	0.104	0.360
Quality	3.849	279	3.748	154	0.101	0.288

*Significant (0.05 level)

Note: N indicates number of responses

Training Task Analysis

There were 45 different training tasks evaluated with the survey. For each task, two separate questions were asked: one on the relevance of the task to the current mission and one on the adequacy of the current task training. Since the scales used to measure the training task statements are different than the scales used for the evaluation of SF, HST, and CESS training, the scales are shown again in Table 4-18.

Table 4-18: Training Task Likert Scale

Importance or Relevance to Mission (MI)				
Unimportant	Minor	Important	Very Important	Critical
1	2	3	4	5
Adequacy or Effectiveness of Current Training (TA)				
Terrible	Poor	Fair	Good	Excellent
1	2	3	4	5

Overall Training Task Results – Mission Importance. The first evaluation that was conducted was based on overall responses. Table 4-19 shows the five tasks that CE officers thought were the most important or relevant to the mission (MI) and the corresponding training adequacy (TA) on those tasks. Each one of these tasks had a resultant MI score that was over 4.0, which means that officers thought these tasks were all Very Important. In comparison, the training adequacy composite scores were in the range from Fair to Good. Statistically speaking, there is a significant difference between MI and TA, but in reality, training scores in the range from 3 to 4 may be sufficient to meet the needs of the mission. Decision makers involved with training curriculum should determine what is an acceptable discrepancy between training task mission importance and training adequacy on an individual basis. The entire list of training tasks sorted by mission importance can be found in Appendix E, Table E-2.

Table 4-19: Mission Importance vs Training Adequacy (sorted by MI)

#	Training Tasks (5 most important)	Mission Imp.	N	Trng Adeq.	N	Diff
1	Nuclear, Biological and Chemical Defense Training (<i>i.e.</i> , Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	4.43	543	3.84	529	0.59*
2	Know Protection from Terrorism Practices	4.39	546	3.18	537	1.22*
3	Bare Base Planning, Development, and Layout	4.35	541	3.51	529	0.84*
4	Harvest Eagle/Falcon Overview (<i>i.e.</i> , know types of materials available, how to get; how to setup; etc)	4.29	541	3.42	529	0.87*
5	Organization and procedures of command centers (<i>i.e.</i> , Wing Operations Center; Survival Recovery Center; Damage Control Center)	4.28	540	3.56	528	0.72*

* Significant (0.001 level)

Note: N indicates number of responses

Overall Training Task Results – Training Adequacy. The second evaluation was related to the adequacy of current task training. Table 4-20 lists the five tasks with the poorest training adequacy scores and their corresponding mission importance scores. The intent of this section is to provide decision makers involved with training curriculum, such as the Civil Engineer and Services School, with a list of tasks for possible further evaluation. Most of the tasks scoring poorly on training adequacy are those that are not commonly a high priority in CE training programs. The entire list of training tasks sorted by training adequacy can be found in Appendix E, Table E-3.

Table 4-20: Mission Importance vs Training Adequacy (sorted by TA)

#	Training Tasks (sorted by training adequacy)	Mission Imp.	N	Trng Adeq.	N	Diff
1	Airlift Process (Know what it is and how to get airlift arranged)	3.81	541	2.10	527	1.71*
2	Deployment Execution Order Interpretation	3.67	540	2.30	527	1.37*
3	Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	3.86	543	2.37	532	1.49*
4	Logistical Operations and Wartime Supply Support	3.80	542	2.38	530	1.41*
5	Multinational Operations (with other countries)	3.57	537	2.43	529	1.14*

* Significant (0.001 level)

Note: N indicates number of responses

Overall Training Task Results – MI and TA Difference. The third evaluation investigated the difference between MI scores and TA scores. The intent of this section is to highlight the biggest disconnects between which tasks CE officers thought were important and the adequacy of the training on those particular tasks. The five training

tasks that had the largest differences between task mission importance and current task training are listed below in Table 4-21.

Table 4-21: Mission Importance vs Training Adequacy (sorted by difference)

#	Training Tasks (5 w/ largest difference)	Mission Imp.	N	Trng Adeq.	N	Diff
1	Airlift Process (Know what it is and how to get airlift arranged)	3.81	541	2.10	527	1.71*
2	Contingency Contracting	3.97	545	2.44	528	1.53*
3	Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	3.86	543	2.37	532	1.49*
4	Logistical Operations and Wartime Supply Support	3.80	542	2.38	530	1.41*
5	Joint Service Operations (with Army, Navy, Marines)	3.85	543	2.46	531	1.38*

* Significant (0.001 level)

Note: N indicates number of responses

The difference in mean scores is an indication that further training may be necessary on certain tasks. As in the previous evaluation, the biggest differences are for tasks that are not commonly thought of as being traditional CE contingency tasks. An example of this is the airlift process. It had an importance rating of 3.81 that is extremely close to *very important*, and a training adequacy rating of *poor* (2.10). From this table, it can be seen that there are certain tasks that course instructors may want to include in future CE officer training curriculum. The entire listing of tasks sorted by difference can be found in Appendix E, Table E-4.

Training Tasks - Deployed versus Non-Deployed For Each Question. In addition to the overall response results, a comparison of mean scores was accomplished between the respondents who had deployed versus those who had not. An example of the results

of this analysis is shown in the Table 4-22. The statement column reflects which of the two questions, mission importance (A) or training adequacy (B), is being displayed. The status column simply lists whether the respondent had deployed or not. In this example, there was no difference in mission importance of Prime BEEF orientation (indicated by the 0.511), but there was a *statistically* significant difference (0.05 level) in the training adequacy scores (indicated by 0.033). From a practical standpoint, however, this difference was not significant.

Table 4-22: Training Tasks (deployed vs non-deployed)

Training Tasks (deploy vs non deploy)	Statement	Status	N	Mean	Significant Difference
Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	Q4_1_A	Not Deployed	191	4.241	0.511
		Deployed	339	4.292	
	Q4_1_B	Not Deployed	185	3.297	0.033*
		Deployed	335	3.469	

The intent of this part of the analysis was to present decision makers with a way to compare whether or not being deployed influenced the way personnel responded. Out of the 45 training tasks, 17 of them had statistically significant differences between mean scores of deployed versus non-deployed for either the mission importance or the training adequacy question. In the opinion of the author, upon further review of all of the training tasks from a practical standpoint, there was no practical difference between how deployed and non-deployed responded. The entire comparison (Table E-5) can be found in Appendix E.

Training Tasks - Deployed & Non-Deployed (Compare MI to TA). To take into consideration the differences between A-question (mission importance) responses and B-question (training adequacy) responses within each group, an additional analysis was performed. An example of this is shown in Table 4-23. Due to the type of analysis that is being performed, there are different number of responses and slightly different means as compared to the previous table. Unlike the previous comparison, almost every task shows a statistically significant difference in how the deployed and non-deployed responded to the questions. From a practical standpoint, the author feels that some of these differences are important, and decision makers should review this table for specific incidents of practical significance. One example is the airlift process, in which the deployed personnel indicated that they felt the task was essentially *very important* (3.91), but training adequacy was *poor* (2.05). The entire table can be found in Appendix E, Table E-6.

Table 4-23: Training Tasks – Deploy & Non-deployed (Compare A to B)

Training Tasks -- deploy & non-deploy (Compare A to B)	Statement	Status	N	Mean	Significant Difference
Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	Q4_1_A	Not Deployed	185	4.23	0.000*
	Q4_1_B		185	3.30	
	Q4_1_A	Deployed	335	4.30	0.000*
	Q4_1_B		335	3.47	

*Significant (0.001 level)

Note: N indicates number of responses

Individual Survey Statement Responses

When combining the survey statements into the four constructs of Quantity, Realism, Priority, and Quality, some of the specific details of the responses to each survey statement were not portrayed. In Appendix F, each statement has the raw scores for each rank listed, as well as an overall score. These scores are very useful from a more microscopic viewpoint. For example, if CESS is interested in specifically knowing how officers felt about the length of time between Mgmt 101 and Mgmt 585, rather than use the combined score for CESS quantity, the decision makers could use the raw score as provided in Appendix F, Table F-3. Upon review of these scores, decision makers would be able to identify that first lieutenants (4.9) and captains (4.8) had the highest agreement with the statement that there was too big of a time span between Mgmt 101 and Mgmt 585. On the other hand, colonels had the lowest score (3.5), indicating that they slightly disagreed that there was too long of a time span between the two courses. The difference in the way these ranks felt about the time span is information that should be reviewed when deciding what changes to make to the future CESS curriculum. Therefore, the author considers the raw scores to be critical information that decision makers should use when evaluating different training programs.

Additional Comments

As part of the survey, a considerable number of respondents provided additional comments. These comments, sorted by rank, are listed in Appendix G. The comments were included verbatim, with only personal identification information being removed. These comments provide some very useful insight into how personnel feel about CE

training in general. While not all comments are useful, most provide some indication of training areas that are either lacking or sufficient to meet the mission requirements. Therefore, these comments may be very useful to decision makers responsible for training curriculum.

Summary of Analysis

A significant amount of information has been provided throughout this chapter on the results of the CE officer contingency survey. Using the overall mean construct scores for each of the training programs, Table 4-24 provides a summary of the results. It includes the Likert scale used for responses, the mean construct scores that were calculated for each type of training, and the construct being measured with its corresponding statement of interest.

Table 4-24: Summary of Overall Results

1	2	3	4	5	6
Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree
		SF	HST	CESS	
Quantity		3.88	3.07	3.03	
Realism		4.45	3.65	4.07	
Priority		3.85	4.18	4.18	
Quality		4.43	3.32	3.81	
Construct		Statement			
Quantity of training		The amount of training offered is adequate to meet contingency mission requirements.			
Realism of training		The current contingency training is realistic.			
Priority of training		Contingency training has the correct priority.			
Quality of Training		The quality of current contingency training is adequate to meet mission requirements.			

V. Conclusion

In this study, the primary research objective was to investigate current overall civil engineer officer contingency training and determine if civil engineer officers think it is adequately preparing them to perform in a contingency environment. This primary objective is supported by three secondary research objectives. Each of these research objectives is discussed in the following paragraphs.

Primary Objective: Overall Adequacy of CE Officer Contingency Training

The results of this study indicate that even though there are several areas that need improvement, from an overall perspective, CE officer contingency training is adequate to meet today's mission requirements. This is evident in the overall construct scores indicating a slight agreement to most of the constructs (values that were in the upper 3s and 4s) except for Home Station Training Quantity and CESS Quantity (scores in the low 3s), which are discussed further in this chapter. Although the level of agreement is not as strong as one would like, the construct scores, supported by remarks in the survey additional comments section, provide a fairly firm basis for making this determination.

Research Objective #2: Adequacy of Current Training Programs

A secondary objective of this research was to determine how well the current contingency training programs are meeting the needs of the CE officer career field and provide recommendations for future course changes. The analysis was accomplished on an individual program basis, with the following results.

Silver Flag. The current Silver Flag training program is adequately meeting the needs of the CE officers in most areas of contingency training, based on the demographic responses, combined construct scores, individual statement scores, and a review of the additional comments that were provided.

Responses were positive concerning Realism and Quality of contingency training at the Silver Flag locations. The overall scores for these constructs indicated a slight agreement to the construct statements. Quantity and Priority were felt to be somewhat less adequate in meeting the mission requirements, as the scores were slightly lower. This was supported by many of the comments provided by respondents in which they stated that they should be attending Silver Flag more often and that more opportunities should be offered to allow more CE officers to attend Silver Flag. Recall that 34 percent of the survey respondents have never attended Silver Flag training.

Home Station Training. The current Home Station Training program for officers is lacking in several areas, based upon the demographic responses, combined construct scores, individual statement scores, and a review of the additional comments that were provided.

Respondents indicated that they *slightly disagreed* with the statement that the amount of training offered is adequate to meet contingency mission requirements. This sentiment was echoed in the demographic chart that showed 71 percent of CE officers spend eight hours or less per month accomplishing contingency training. As previously mentioned in Chapter 4, 57 percent (154) of the respondents indicated that less than 10 percent of their normal day-to-day duties resemble contingency tasks in any given work week. Since peacetime duties do not resemble contingency duties, the majority of officer

contingency training must be accomplished through one of the three main training avenues discussed in this research. While there is no “correct” amount of time that should be devoted to contingency training, most officers indicated through their comments and survey responses that the amount of training being accomplished at base level is not adequate to meet contingency requirements.

The second HST construct of concern is Quality. Respondents gave this construct a score of 3.32, which is in the lower half of the *slightly disagree* range of values. This indicates that officers do not feel that the quality of their Home Station Training program is adequate to meet mission requirements. This finding is one of the hardest to interpret, as each base independently manages their training programs. The perceived Quality is a combination of instructor knowledge, commander involvement, and choice of training tasks. From the comments, respondents indicated that, while home station training covered most of the basic “combat” requirements, the training failed to include some of the more “deployed” type of tasks that an officer may encounter while in a contingency environment, such as working with another country's military in a multinational deployment (see other tasks in Appendix E). Several respondents also indicated that too much emphasis was being placed on combat type tasks, and not enough on engineering tasks. In today's deployment scenarios, CE officers are going to locations that require CE officers to do tasks such as contract management, project design, and host nation support which require a different type of contingency training.

Civil Engineer and Services School. The Civil Engineer and Services School program could use improvement in several areas, based upon the demographic responses,

combined construct scores, individual statement scores, and a review of the additional comments that were provided.

The first area of concern is the Quantity construct. On the six-point scale, CESS Quantity scored a mean value of 3.03, indicating that respondents *slightly disagreed* that the amount of training provided is adequate to meet the mission. Many respondents felt that Mgmt 101 and Mgmt 585, while being good courses, were not sufficient to meet all of the mission requirements. Based upon the individual survey statements, respondents *slightly agreed* that there should be more contingency training classes taught.

Respondents also *moderately agreed* that the time span between Mgmt 101 and Mgmt 585 was too long and that an additional course should be offered somewhere in between. This research did not analyze when that training should take place in an officer's career, but rather only measured the officers' perception on whether an additional course was needed or not. Captains and first lieutenants had the highest degree of agreement with the survey statement that the time span between the contingency courses offered by CESS was too long.

Similar to Home Station Training, an area of concern prevalent in the comments on CESS training was that there is a lack of traditional engineering courses. The general feeling is that CE officers are expected to know all facets of doing a design simply based on the fact they have an engineering undergraduate degree. Therefore, young CE officers are being sent on deployments and being forced to learn by trial-and-error, which is not necessarily an efficient use of Air Force resources. Additional training on general contingency engineering principles would benefit the officer in any deployment scenario.

Recommendations. There are several recommendations that should be considered when developing the overall CE officer training program.

- a. Allow more officers to attend Silver Flag training; add additional officer positions to the team roster.
- b. Increase the amount of Home Station Training time that CE officers study and practice contingency tasks.
- c. Consider adding an engineering review session to Home Station Training curriculum.
- d. Introduce an additional contingency course in the time span between Mgmt 101 and Mgmt 585. This course could address the traditional contingency tasks of base recovery, as well as the topics of sustainment, contingency project management, and joint service operations, etc.
- e. Re-evaluate the need for more traditional engineering courses at CESS. This recommendation is based upon the many additional comments that indicated a need for this type of training.
- f. Update the CE officer CFETP and Air Force Instructions to reflect a more comprehensive officer training program that can be used as a standard.
- g. Consider assigning officers at the MAJCOM level to be subject matter experts and oversee CE officer training. These personnel should work closely with the CE Officer Training manager at AFCESA, the RED HORSE Silver Flag detachment commanders, and the Civil Engineer and Services School to ensure training objectives are being met in the CE officer career field.
- h. Review curriculum to see if additional training tasks (as identified in Appendix E) should be included in the overall training program. A majority of tasks officers identified as being poorly trained on are typically not considered traditional CE tasks, yet they are often encountered in deployments and officers need to be trained on them.
- i. Decision makers should work closely with their training counterparts (*i.e.*, SF, AFCESA, CESS) to ensure a comprehensive contingency training curriculum is being provided to CE officers.

Research Objective #3: Rank Differences

Another secondary objective was to investigate the differences in training perception between the different ranks of officers (Lieutenants through Colonels) to determine if there is a rank effect. This research showed that for Silver Flag training the scores for captains were consistently lower among the ranks. This indicates that, overall, captains do not rate Silver Flag training as high as the other ranks. This may be an area of concern, as captains make up approximately 35 percent of the entire civil engineer officer career field. Additionally, of the 347 personnel who have deployed, 153 of them were captains, indicating that they have a good deal of experience in the field with which to judge their contingency training. There was no statistically significant difference between the ranks for Home Station Training; although it is not statistically significant, it is of note that the five colonels responding to this section of the study rated each of the constructs higher than any of the other five ranks. From a practical standpoint, it appears that senior level officers believe the home station training being provided is better than the junior officers believe. CESS training results show that there was a statistically significant difference in several of the constructs. The majority of these were between the lower ranking officers and colonels, with colonels always ranking the training higher. The general trend for CESS training, for all four constructs, is an increase from lowest scores to highest scores as rank increases. Therefore, this indicates that the junior officers are not as satisfied with the caliber of training as the more senior officers.

Research Objective #4: Deployed versus Non-Deployed

A fourth objective of this study was to investigate the differences in attitudes about contingency training between CE officers who have been deployed to those who have never been deployed. For the three training programs, Home Station Training was the only program that had a statistically significant difference in any of the measured constructs. Personnel who had deployed rated the Quantity of training received just slightly higher than those that did not deploy. From a practical standpoint, this is an insignificant difference of only 0.3 (3.2-2.9), which is not enough to cause the overall ranking of that construct to change.

Of the 45 training tasks evaluated in the last section of the survey, 17 of them had statistically significant differences between mean scores of deployed versus non-deployed personnel for either the mission importance or the training adequacy question. In the opinion of the author, upon further review of all of the training tasks and from a practical standpoint, there was no real difference between how deployed and non-deployed personnel responded.

Final Comments

CE officer contingency training is a combination of various training avenues. The three primary areas of contingency instruction have been presented in this study. Together they indicated whether CE officer contingency training is adequate to meet today's mission requirements based on officer perceptions. The specific programs cannot stand alone, but must be integrated in a manner that is conducive to training officers for

contingency operations. Training from Silver Flag, Home Station, and Civil Engineer and Services School form the nucleus for a comprehensive contingency training program.

Future Research Opportunities

The following topics are potential research areas that could build upon this original framework of CE officer contingency training.

Analysis of Additional Comments. A separate analysis of the approximately 220 additional comments that the CE officers provided could be accomplished. By analyzing the comments, training managers could get another in-depth look at the officers' perceptions of contingency training. The results of that analysis could be used to solidify and validate the current research results.

Professional Engineering Development. A study of CE officers' professional engineering development could provide great information for future engineering training curriculum. The current research indicated that officers' felt they were lacking in fundamental engineering skills. By pursuing this type of analysis, CE career managers could determine if advanced academic degrees and registration as Professional Engineers should be encouraged or mandated for CE officers.

Current Curriculum Development. Research could be conducted on the current CE officer training curriculum development process. This analysis could provide the current curriculum managers with an indication of how the current process is working and provide recommendations for future changes.

Appendix A: Survey Package

Steps to Emailing Survey:

Table A-1: Steps to Emailing Survey

Step	Description
1	Requested list of names and bases of all civil engineer officers (2nd Lt-Col)
2	Received list from registrar; list was in Excel database format
3	The list did not have separate columns for first name and last name; using the <i>text to columns</i> function these two were separated.
4	The base names had to be changed to email format (<i>i.e.</i> Wright-Patterson AFB changed to WPAFB).
5	Using the <i>CONCATENATE</i> function in Excel, an additional column was created that combined the first name, last name and base into the proper email format.
6	The email column was copied into word; using the <i>convert table to text</i> function and the <i>replace</i> function (needed to replace a paragraph mark with a semi-colon), the columnar data was converted into proper format to be placed in the Microsoft Outlook address section.
7	Using the blind carbon copy (BCC) field (prohibits receiver from seeing who else email went to), and requesting a delivery receipt (lets sender know if email was delivered to address), the introductory message and web-link were sent to all potential respondents. Note: introductory message requested respondent fill out survey within five days of receiving the email.
8	The deliverable and non-deliverable receipts were compiled and analyzed for trends to see if certain locations were not receiving email using the format of firstname.lastname@base.af.mil. The only change made was for personnel stationed at Brooks AFB; rather than just brooks.af.mil it needed to be hqafcee.brooks.af.mil. Once changes were made, a second message was sent with new address.
9	A follow-up email was sent one week after initial; this email contained original message plus clarification of any issues raised by respondents. A deadline for survey submission was also specified.

Copy of Survey Email:

From: Vaira Rusty J Capt AFIT/ENV
Sent: Tuesday, November 28, 2000 10:59 AM



28 November 2000

Lt Col Nathan G. Macias
Det 1, 823d RED HORSE (Silver Flag Exercise Site)
Tyndall AFB FL 32403-5319

Fellow Civil Engineer Officers,

We need your help to complete this survey related to the current civil engineer officer contingency training programs. You are part of a relatively select group of officers chosen to represent the views of all CE officers. **Your answers are very important.**

This survey gives you an opportunity to share your opinions and experiences concerning the contingency training you have received. I ask you to please take about 15 minutes to complete this very important survey, and base your answers on your own experiences and opinions. **We will keep your answers completely confidential. Results will be submitted in such a way that no individual respondent can be identified.**

Please go to the following survey web link <http://cessmil.afit.af.mil/contingency> and complete the on-line questionnaire. Upon receipt of this email, please complete the survey within 5 days. We truly need your help. Your participation is essential to ensure that we are doing everything we can to support you, the Air Force Civil Engineer officers. Thanks in advance for your help.

//signed//

NATHAN G. MACIAS, Lt Col, USAF
Commander

Copy of Follow-up Email:

-----Original Message-----

From: Vaira Rusty J Capt AFIT/ENV
Sent: Wednesday, December 06, 2000 12:48 PM
Subject: FOLLOW-UP: CE Officer Contingency Training

First of all, THANK YOU to everyone who has already completed the CE Officer Contingency Training Survey. Your input is greatly appreciated.

If you have not filled out the survey, please take a few minutes to let us know what your experiences and opinions are regarding CE Officer Contingency Training. Your feedback is important to deciding what and how to improve contingency training. If you experienced technical problems in trying to take the survey, please read the notes below. To take the survey, simply click on the following link:
<http://cessmil.afit.af.mil/contingency>.

A couple of IMPORTANT notes on taking the survey:

- Please use Internet Explorer, as it has come to my attention that other browsers, such as Netscape, will not work with parts of the survey.
- The website link must be accessed from a military computer (.mil)
- If you run into problems, please notify me via email.

If you choose to participate, please complete the survey by COB next Wednesday, 13 Dec 00.

Thank you,

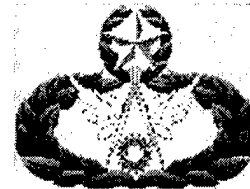
Capt Rusty Vaira
AFIT Civil Engineering Graduate Student

CE Officer Contingency Training Survey (Paper Based)



U.S. AIR FORCE

CE OFFICER CONTINGENCY TRAINING SURVEY



About the Study

Purpose: My research is investigating the effectiveness of the current Air Force Civil Engineer officer contingency training program.

Confidentiality: You are a part of a relatively small group of officers selected to represent the views of CE officers. **Your answers are important.** ALL ANSWERS ARE STRICTLY CONFIDENTIAL and, unless you wish to tell me your identity, all answers are anonymous. No identification of individual responses will occur. I ask for some demographic and other information in order to interpret results more accurately.

Time Required: It will probably take you about 15 minutes to complete this questionnaire.

Approval: This study has been approved by AFPC with a control number of USAF SCN 00-97. Survey expiration date is 1 April 2001.

Sponsor: This study is being sponsored by Det 1, 823rd RED HORSE, Tyndall AFB FL

Contact Information: If you have any questions or comments regarding this survey, you may contact either me or my thesis advisor via email, mail, or phone. Thank you very much for your participation.

Sincerely,

//signed//

Capt Rusty Vaira
Air Force Institute of Technology/ENV
2950 P Street, Bldg. 640
WPAFB OH 45433-7765
rusty.vaira@afit.af.mil
Comm: (937) 233-7593

Lt Col Alfred Thal, Jr., Ph.D.
Air Force Institute of Technology/ENV
2950 P Street, Bldg. 640
WPAFB OH 45433-7765
alfred.thal@afit.af.mil
DSN 785-3636 ext. 4591

INSTRUCTIONS

This questionnaire is designed to assess the effectiveness of Air Force Civil Engineer Officer Contingency Training. It consists of five sections (Silver Flag, Home Station Training, CESS courses, Training Tasks, and Demographics). All items must be answered by clicking on the appropriate bubble for each of the questions. If, for any item, you do not find a response that fits your situation exactly, use the one that is the closest to the way you feel.

The following definitions will be used throughout this questionnaire:

Contingency Training: This encompasses Home Station (*i.e.*, Prime BEEF), Silver Flag, and Civil Engineer and Services School training for the entire range of contingency operations that Civil Engineers might expect to encounter.

Contingency Operation: An emergency involving military forces caused by natural disasters, terrorists, subversives, or by required military operations. This includes peacekeeping or humanitarian missions, military operations other than war, and limited or full scale war.

Please answer each statement with respect to these definitions.

Begin Survey

Privacy Notice

In accordance with AFI 37-132, Paragraph 3.2, the following information is provided as required by the Privacy Act of 1974:

Authority: 10 U.S.C. 8012, Secretary of the Air Force; powers and duties; delegation by; implemented by AFI 36-2601, Air Force Personnel Survey Program.

Purpose: To obtain information regarding contingency training of civil engineer officers in the United States Air Force. Surveys will be administered to civil engineer officers of the USAF.

Routine Use: No analysis of individual responses will be conducted and only members of the research team will be permitted access to the raw data. A final report will be provided to Silver Flag Exercise Site, Detachment 1, RED HORSE Squadron, Tyndall AFB, Florida.

Participation: Participation is VOLUNTARY. No adverse action will be taken against any member who does not participate in this survey or who does not complete any part of the survey. This site is intended for the use of the Air Force only. Do not reproduce or distribute the content of this site to a wider audience without coordination with the information owner and your unit public affairs office.

This is a Department of Defense computer system. This computer system, including all related equipment, networks, and network devices (specifically including Internet access) are provided only for authorized U.S. Government use. DoD computer systems may be monitored for all lawful purposes, including to ensure that their use is authorized, for management of the system, to facilitate protection against unauthorized access, and to verify security procedures, survivability, and operational security. Monitoring includes active attacks by authorized DoD entities to test or verify the security of this system. During monitoring, information may be examined, recorded, copied, and used for authorized purposes. All information, including personal information, placed or sent over this system may be monitored. Use of this DoD computer system, authorized or unauthorized, constitutes consent to monitoring of this system. Unauthorized use may subject you to criminal prosecution. Evidence of unauthorized use collected during monitoring may be used for administrative, criminal, or other adverse action. Use of this system constitutes consent to monitoring for these purposes.

SECTION 1: Silver Flag Training:

- a. When did you last participate in unit training conducted at a Silver Flag Exercise Site (**not** including MGMT 101 Officer Field Education week)?

☐ Never ☐ 1 yr ago ☐ 2 yrs ago ☐ 3 yrs ago ☐ 4 yrs ago ☐ 5 or more yrs ago

If you answered “Never” please skip to Section 2, Home Station Training Program. Otherwise, please proceed with next question below.

Please answer the following series of questions *based on your training experience*. Please use the rating scale below for each of your answers.

1 Strongly disagree	2 Moderately disagree	3 Slightly disagree	4 Slightly agree	5 Moderately agree	6 Strongly agree	NA Not Applicable						
						1	2	3	4	5	6	N A
b. Civil Engineer unit's place a high emphasis on completing all Silver Flag pre-requisite planning and training tasks prior to attending training at Silver Flag.						☐	☐	☐	☐	☐	☐	☐
c. I should be attending Silver Flag more often to hone my contingency skills.						☐	☐	☐	☐	☐	☐	☐
d. The contingency training conducted at Silver Flag does not apply to the required tasks I will perform during a contingency.						☐	☐	☐	☐	☐	☐	☐
e. More emphasis should be placed on Silver Flag training.						☐	☐	☐	☐	☐	☐	☐
f. The contingency training I receive at Silver Flag needs improvement.						☐	☐	☐	☐	☐	☐	☐
g. The length of contingency training conducted at Silver Flag (1 week) is sufficient to prepare me for my contingency missions.						☐	☐	☐	☐	☐	☐	☐
h. Overall, training conducted at Silver Flag has better prepared me to perform my contingency duties.						☐	☐	☐	☐	☐	☐	☐
i. The skills that I am taught at Silver Flag are relevant in meeting my contingency responsibilities.						☐	☐	☐	☐	☐	☐	☐
j. The officer training curriculum at Silver Flag is training me on the wrong skills to meet my contingency requirements.						☐	☐	☐	☐	☐	☐	☐
k. The amount of contingency training that Silver Flag provides is enough to prepare me for my contingency missions.						☐	☐	☐	☐	☐	☐	☐
l. The contingency training I receive while at Silver Flag is appropriate for what I would do during a contingency.						☐	☐	☐	☐	☐	☐	☐
m. The contingency training I receive at Silver Flag is very realistic.						☐	☐	☐	☐	☐	☐	☐
n. Preparing and attending Silver Flag training is not a high priority at base level.						☐	☐	☐	☐	☐	☐	☐
o. I am satisfied with the quality of contingency training I receive at Silver Flag.						☐	☐	☐	☐	☐	☐	☐
p. The scenarios used for contingency training at Silver Flag are not very realistic.						☐	☐	☐	☐	☐	☐	☐
q. Adequate time is made available to complete the Silver Flag pre-requisite training.						☐	☐	☐	☐	☐	☐	☐
r. Overall, Silver Flag training has not contributed to preparing me for my assigned contingency duties.						☐	☐	☐	☐	☐	☐	☐

SECTION 2: Home Station Training Program (i.e., Prime BEEF)

- a. Do you currently participate in your current duty location's home station contingency training program (i.e. Prime BEEF training)

☐ YES (continue with next question)
☐ NO (please skip to Section 3, Civil Engineer and Services School)

- b. On average, how many hours per month do you personally spend in contingency training?

☐ Less than 4 hrs/month ☐ 13 – 16 hrs/month
☐ 4 – 8 hrs/month ☐ More than 16 hrs/month
☐ 9 – 12 hrs/month

- c. On average, what percentage of your time during a normal work-week is spent performing tasks that closely resemble the tasks you will perform while deployed during a contingency?

☐ Less than 10% ☐ 41 – 60%
☐ 11 – 25% ☐ 61 – 75%
☐ 26 – 40% ☐ More than 75%

Please use the rating scale below for each of your answers.

1 Strongly disagree	2 Moderately disagree	3 Slightly disagree	4 Slightly agree	5 Moderately agree	6 Strongly agree	NA Not Applicable						
						1	2	3	4	5	6	N A
d.	The amount of contingency training that I receive through home station training is enough to prepare me for my contingency missions.					☐	☐	☐	☐	☐	☐	☐
e.	The scenarios used for home station contingency training are not very realistic.					☐	☐	☐	☐	☐	☐	☐
f.	The skills that I am taught at home station are appropriate for meeting my contingency responsibilities.					☐	☐	☐	☐	☐	☐	☐
g.	Contingency training is one of our squadron's highest priorities.					☐	☐	☐	☐	☐	☐	☐
h.	My home station contingency training program is very good.					☐	☐	☐	☐	☐	☐	☐
i.	The amount of time I spend on my normal peacetime mission and taskings does not leave enough time for adequate contingency training.					☐	☐	☐	☐	☐	☐	☐
j.	The home station contingency training I receive is appropriate for what I might need during a contingency deployment.					☐	☐	☐	☐	☐	☐	☐
k.	Overall, home station contingency training conducted at my current duty station adequately prepares me to perform my contingency duties.					☐	☐	☐	☐	☐	☐	☐
l.	My unit's home station contingency training curriculum is focused on the wrong things to meet my contingency requirements.					☐	☐	☐	☐	☐	☐	☐

1 Strongly disagree	2 Moderately disagree	3 Slightly disagree	4 Slightly agree	5 Moderately agree	6 Strongly agree	NA Not Applicable						
						1	2	3	4	5	6	N A
m. The amount of contingency training that I receive at my current duty location is insufficient to meet my contingency responsibilities.						C	C	C	C	C	C	C
n. The home station contingency training I receive is very realistic.						O	O	O	O	O	O	O
o. Compared to other CE requirements at my current base, contingency training receives lower priority.						C	C	C	C	C	C	C
p. The home station contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.						O	O	O	O	O	O	O
q. I am satisfied with the quality of home station contingency training I receive.						C	C	C	C	C	C	C
r. The home station contingency training I receive needs improvement.						O	O	O	O	O	O	O
s. I should be receiving more training at my home station to hone my contingency skills.						C	C	C	C	C	C	C
t. Adequate time is made available at my current duty station to complete my contingency training requirements.						O	O	O	O	O	O	O
u. Overall, home station contingency training does not adequately prepare me for my assigned contingency duties.						C	C	C	C	C	C	C

Continue with next section

SECTION 3: Civil Engineer and Services School (WPAFB).

a. Which of the following contingency classes have you attended at the Civil Engineer and Services School (located at Wright-Patterson AFB, OH)? (check all that apply)

- ☐ MGMT 101 (Intro to the Base CE Organization Course – for CE officers with 6 months time in service)
- ☐ MGMT 585 (Contingency Engineer Command Course – for captains and majors with 8 yrs time in service)
- ☐ Neither (please skip to Section 4, Training Tasks)

Please continue and answer the following series of questions based on the class(es) you have attended by using the rating scale below.

1 Strongly disagree	2 Moderately disagree	3 Slightly disagree	4 Slightly agree	5 Moderately agree	6 Strongly agree	NA Not Applicable						
						1	2	3	4	5	6	N A
b. The number of contingency training courses that CESS provides is enough to prepare me for my contingency missions.						☐	☐	☐	☐	☐	☐	☐
c. Adequate time is/was made available to prepare me to attend CESS contingency classes.						☐	☐	☐	☐	☐	☐	☐
d. CESS contingency courses offered (i.e., MGMT 101 and/or MGMT 585) are sufficient to prepare me for my contingency missions.						☐	☐	☐	☐	☐	☐	☐
e. CESS should offer an additional contingency course to better prepare me to meet my contingency missions.						☐	☐	☐	☐	☐	☐	☐
f. The contingency training I receive at CESS needs improvement.						☐	☐	☐	☐	☐	☐	☐
g. Overall, CESS training does not adequately prepare me for my assigned contingency duties.						☐	☐	☐	☐	☐	☐	☐
h. The scenarios used for contingency training at CESS are not very realistic.						☐	☐	☐	☐	☐	☐	☐
i. My unit places a high emphasis on sending CE officers to CESS contingency courses.						☐	☐	☐	☐	☐	☐	☐
j. The CESS contingency training I receive is appropriate for what I might need during a contingency.						☐	☐	☐	☐	☐	☐	☐
k. CESS contingency course lesson plans are focused on the wrong skills to meet my contingency requirements.						☐	☐	☐	☐	☐	☐	☐
l. The CESS courses are training the correct material to meet my contingency requirements.						☐	☐	☐	☐	☐	☐	☐
m. Attending CESS contingency courses is/was a high priority at my base.						☐	☐	☐	☐	☐	☐	☐
n. There should be more contingency training classes taught at CESS to help hone my contingency skills.						☐	☐	☐	☐	☐	☐	☐
o. The CESS contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.						☐	☐	☐	☐	☐	☐	☐
p. I am satisfied with the quality of contingency training I receive at CESS.						☐	☐	☐	☐	☐	☐	☐
q. There is too big of time span between MGMT 101 and MGMT 585 (approximately 7 years).						☐	☐	☐	☐	☐	☐	☐
r. Overall, training conducted at CESS adequately prepares me to perform my contingency duties.						☐	☐	☐	☐	☐	☐	☐
s. The contingency training I receive at CESS is very realistic.						☐	☐	☐	☐	☐	☐	☐

SECTION 4: Training Tasks

- If you have NEVER attended Silver Flag training, participated in Home Station Training or attended MGMT 101 or MGMT 585, please skip to the next section. - For each of the following tasks, please answer both questions, which are in the columns to the right. - The first column is trying to gauge the importance or relevance of that particular task to the overall CE contingency mission. - The second column is evaluating the adequacy or effectiveness of <i>current</i> training in that particular task.		Importance or relevance to mission 1 – Unimportant 2 – Minor 3 – Important 4 – Very Important 5 – Critical	Adequacy or Effectiveness of Current Training 1 – Terrible 2 – Poor 3 – Fair 4 – Good 5 – Excellent
	General Contingency	1 2 3 4 5	1 2 3 4 5
1	Prime BEEF (PB) Orientation (<i>i.e., familiarization of PB mission, team organization, equipment and training requirements, etc</i>)	0 0 0 0 0	0 0 0 0 0
2	Familiarization with Civil Engineer doctrine.	0 0 0 0 0	0 0 0 0 0
	Resource and Force Protection		
3	Know Protection from Terrorism Practices	0 0 0 0 0	0 0 0 0 0
4	Law of Armed Conflict	0 0 0 0 0	0 0 0 0 0
5	Personal Security (<i>i.e., Work Party Security, Convoy Procedures, Defensive Fighting Positions</i>)	0 0 0 0 0	0 0 0 0 0
6	Air Base Defense	0 0 0 0 0	0 0 0 0 0
7	Weapons/Small Arms Qualification	0 0 0 0 0	0 0 0 0 0
8	Threat Assessments	0 0 0 0 0	0 0 0 0 0
9	Base Denial	0 0 0 0 0	0 0 0 0 0
10	Resource Protection (<i>i.e., Dispersal; Camouflage, Concealment and Deception; Blackout Methods; Facility Hardening</i>)	0 0 0 0 0	0 0 0 0 0
	Contingency Management and Deployment Planning Actions		
11	Deployment Experiences	0 0 0 0 0	0 0 0 0 0
12	Contingency Contracting	0 0 0 0 0	0 0 0 0 0
13	Cross Cultural Relations (understanding other cultures)	0 0 0 0 0	0 0 0 0 0
14	War Planning (the big picture)	0 0 0 0 0	0 0 0 0 0

15	Status of Reportable Training (SORTS)	0 0 0 0 0	0 0 0 0 0
16	Airlift Process (Know what it is and how to get airlift arranged)	0 0 0 0 0	0 0 0 0 0
17	Deployment Execution Order Interpretation	0 0 0 0 0	0 0 0 0 0
18	Status of Forces Agreements (Know how and when apply)	0 0 0 0 0	0 0 0 0 0
19	Know types of Contracting options available (i.e., AFCAP, LOCAP, COE, NAVFAC, etc)	0 0 0 0 0	0 0 0 0 0
20	Logistical Operations and Wartime Supply Support	0 0 0 0 0	0 0 0 0 0
21	Family Preparation (Know how to prepare for deployments)	0 0 0 0 0	0 0 0 0 0
22	Manpower Management	0 0 0 0 0	0 0 0 0 0
23	Multinational Operations (with other countries)	0 0 0 0 0	0 0 0 0 0
24	Joint Service Operations (with Army, Navy, Marines)	0 0 0 0 0	0 0 0 0 0
25	Prime RIBS (Services Squadron) Operations	0 0 0 0 0	0 0 0 0 0
	<i>Force Beddown</i>		
26	Harvest Eagle/Falcon Overview (i.e., know types of materials available, how to get; how to setup; etc)	0 0 0 0 0	0 0 0 0 0
27	Contingency Environmental Management	0 0 0 0 0	0 0 0 0 0
28	Wartime Construction Management	0 0 0 0 0	0 0 0 0 0
29	Bare Base Planning, Development, and Layout	0 0 0 0 0	0 0 0 0 0
	<i>Expedient Repair/Construction</i>		
30	Rapid Runway Repair (RRR) Overview (i.e., Minimum Operating Strip (MOS) Selection; Repair Quality Criteria; Emergency Airfield Lighting System (EALS); Mobile Aircraft Arresting System)	0 0 0 0 0	0 0 0 0 0
31	Damage Assessment and Response Team (DART) Operations	0 0 0 0 0	0 0 0 0 0
32	Refrigeration Unit Overview	0 0 0 0 0	0 0 0 0 0
33	Water Distribution System and Reverse Osmosis Water Purification Unit (ROWPU) Operations	0 0 0 0 0	0 0 0 0 0
34	POL Operations Overview	0 0 0 0 0	0 0 0 0 0
35	Electrical Distribution and Generation System Overview	0 0 0 0 0	0 0 0 0 0
	<i>Command and Control</i>		
36	Organization and procedures of command centers (i.e., Wing Operations Center; Survival Recovery Center; Damage Control Center)	0 0 0 0 0	0 0 0 0 0
37	Communications among organizations	0 0 0 0 0	0 0 0 0 0

38	Workforce work/rest cycles	O O O O O	O O O O O
	<i>Training/Exercises</i>		
39	Overnight Bivouac	O O O O O	O O O O O
40	Deployment Procedures (i.e., Recall Procedures; Personnel Processing; Equipment Marshaling)	O O O O O	O O O O O
41	Nuclear, Biological and Chemical Defense Training (i.e., Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	O O O O O	O O O O O
42	Explosive Ordnance Reconnaissance Training	O O O O O	O O O O O
43	Field Sanitation and Health (i.e., personal hygiene, control of diseases, water purification, kitchen and mess sanitation)	O O O O O	O O O O O
44	Self-Aid/Buddy Care and CPR Training	O O O O O	O O O O O
45	Vehicle and Equipment Operations	O O O O O	O O O O O

Continue with next section

SECTION 5: Demographics

a. What is your current rank?

- ☐ 2LT ☐ 1LT ☐ CAPT ☐ MAJ ☐ LT COL ☐ COL
☐ Other _____

b. What MAJCOM are you assigned to?

- ☐ ACC ☐ AMC ☐ AFMC ☐ AFSPC ☐ PACAF ☐ USAF ☐ AETC
☐ Other _____

c. What "level" or position are you currently assigned to (mark all that apply)?

- ☐ Staff Position ☐ Base Level CE (Group or Squadron)
☐ RED HORSE ☐ Remote Assignment
☐ Joint Service Assignment ☐ Other _____

d. To what flight/position are you currently assigned?

- ☐ Operations Flight ☐ Engineering Flight
☐ Resource Flight ☐ Explosive Ordnance Disposal Flight
☐ Readiness Flight ☐ Environmental Flight
☐ Housing Flight ☐ Base Civil Engineer
☐ Other _____

e. How many times in your career have you been deployed to a *non-combat* operation such as a humanitarian mission, a natural disaster relief mission, or other similar type of non-combat contingency operation?

- ☐ Never
☐ Once
☐ Twice
☐ Three times
☐ Four or more times

f. How many times in your career have you been deployed to a *combat type* operation such as a small scale contingency, a peacekeeping mission, a low intensity conflict, a major theater war, or a similar combat contingency operation?

- ☐ Never
☐ Once
☐ Twice
☐ Three times
☐ Four or more times

g. How many days have you been deployed to a contingency in the past 12 months?

- ☐ None
- ☐ 1 – 14 days
- ☐ 15 – 60 days
- ☐ 61 – 120 days
- ☐ More than 120 days

h. How long have you been assigned to your current duty location?

- ☐ Less than 6 months
- ☐ 6 – 12 months
- ☐ 13 – 24 months
- ☐ More than 24 months

i. Have you ever read the CE Officer Career Field Education Training Plan (CFETP) guidance?

- ☐ Yes
- ☐ No
- ☐ Don't know what the CFETP document is.

**This completes the survey. Thank you for your participation.
If you have any additional comments please write them here.**

Appendix B: Responses to Survey Demographic Statements

Question #5a: "What is your current rank?"

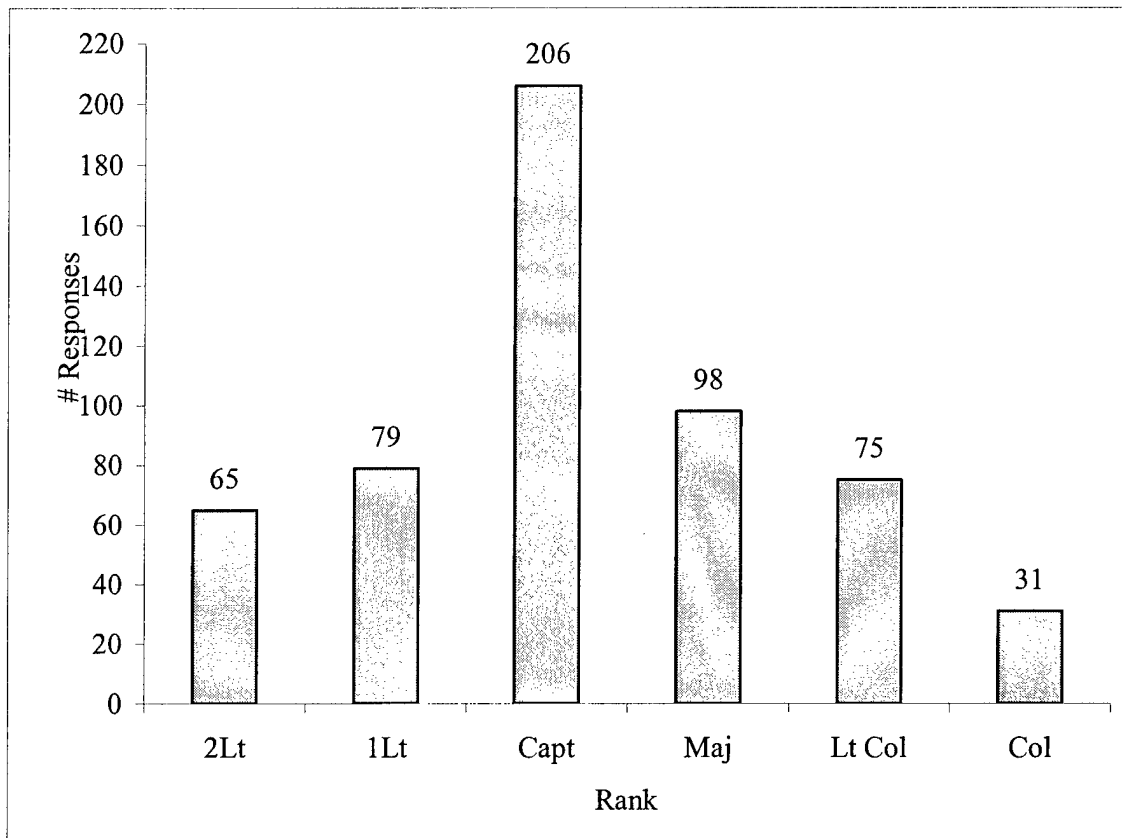


Figure B-1: Total Number of Responses to Question #5a

Table B-1: Breakdown of Responses by Rank to Question #5a

Rank	# Usable Responses	Usable responses as % of Total	Total in Career Field*	% of Career Field used in analysis
2Lt	65	11.73%	224	29.02%
1Lt	79	14.26%	175	45.14%
Capt	206	37.18%	490	42.04%
Major	98	17.69%	220	44.55%
Lt Col	75	13.54%	223	33.63%
Col	31	5.60%	70	44.29%
TOTAL	554	100%	1402	--

* From AFPC websearch: <http://www.afpc.randolph.af.mil> (30 Sep 00). This number varies slightly with the total number of emails sent out (1445); difference is due to changes in # of personnel between initial query and when survey sent.

Question #5b: “What MAJCOM are you assigned to?”

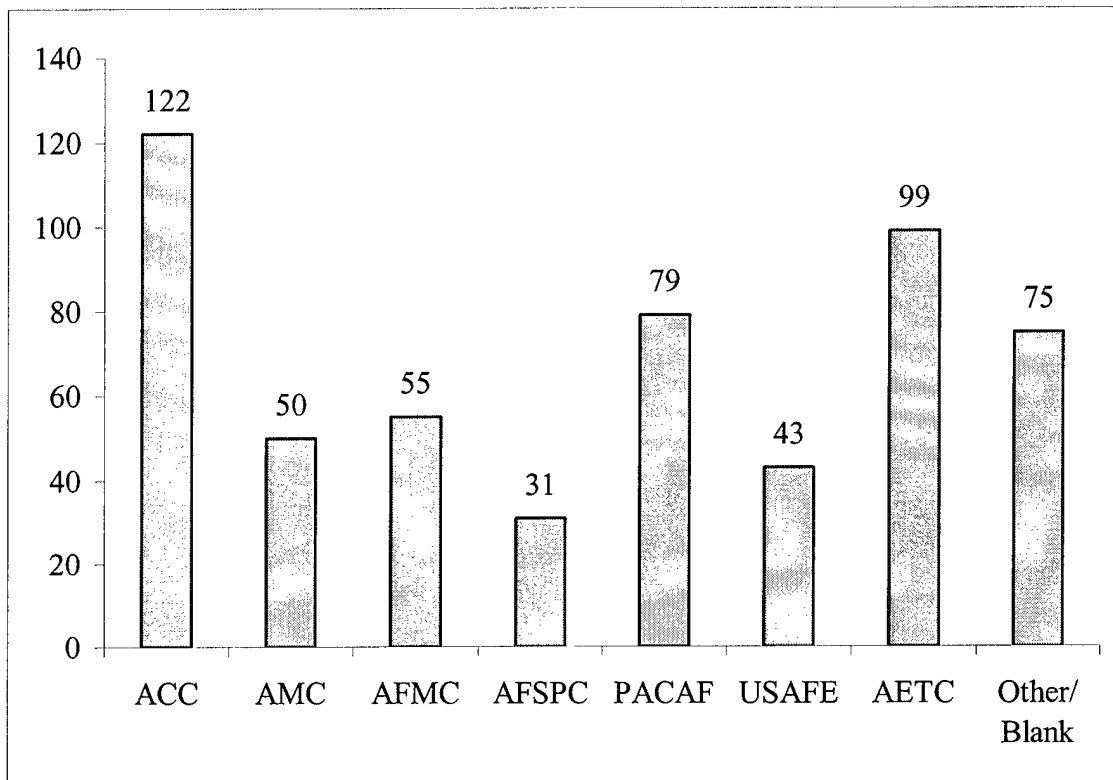


Figure B-2: Number of Responses by MAJCOM to Question #5b

Table B-2: Breakdown of Responses by Rank and MAJCOM (%) to Question #5b

	ACC	AMC	AFMC	AFSPC	PACAF	USAFE	AETC	Other/ Blank
2 Lt	38.5%	10.8%	20.0%	4.6%	3.1%	0.0%	21.5%	1.5%
1 Lt	25.3%	11.4%	8.9%	6.3%	20.3%	2.5%	20.3%	5.1%
Capt	17.0%	7.3%	8.3%	5.3%	20.4%	12.1%	18.0%	11.7%
Major	19.4%	7.1%	6.1%	10.2%	7.1%	9.2%	15.3%	25.5%
Lt Col	25.3%	10.7%	8.0%	1.3%	13.3%	6.7%	16.0%	18.7%
Col	12.9%	12.9%	19.4%	3.2%	6.5%	6.5%	16.1%	22.6%
Total	22.0%	9.0%	9.9%	5.6%	14.3%	7.8%	17.9%	13.5%

Question #5c: “What level or position are you currently assigned to?”

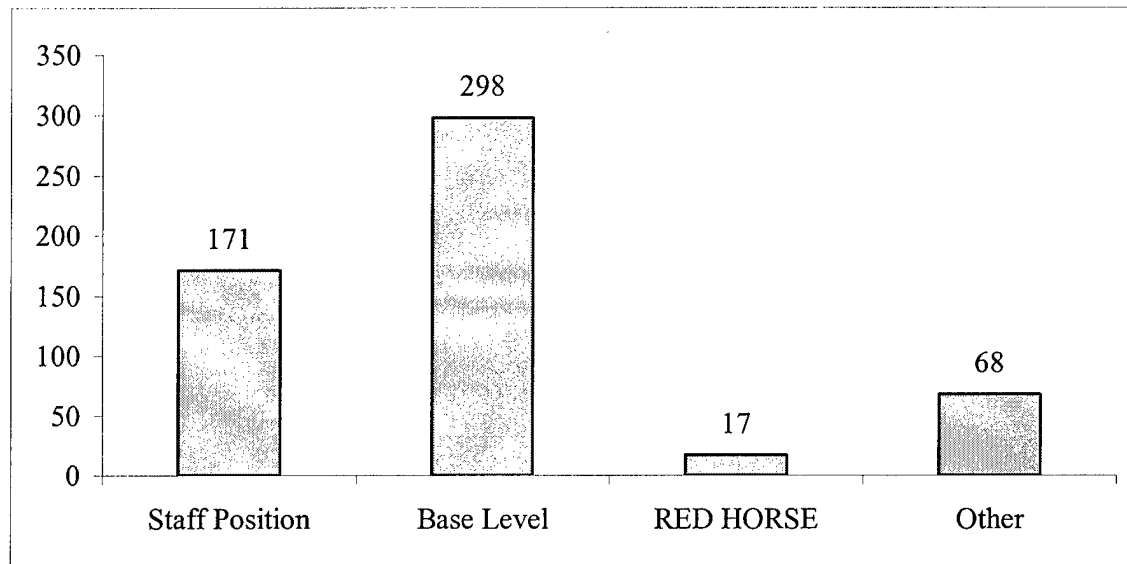


Figure B-3: Number of Responses to Question #5c

Table B-3: Breakdown of Responses by Rank and MAJCOM to Question #5c

	Staff Position	Base Level	RED HORSE	Other/ Blank	Totals
2 Lt	0	60	2	3	65
1 Lt	1	71	2	5	79
Capt	63	102	7	34	206
Major	57	29	2	10	98
Lt Col	28	33	3	11	75
Col	22	3	1	5	31
Total	171	298	17	68	554
Remote	1	14	2	5	22
Joint Service	0	0	0	3	3
ACC	26	70	15	11	122
AMC	12	36	0	2	50
AFMC	15	36	0	4	55
AFSPC	9	19	0	3	31
PACAF	18	54	2	5	79
USAFE	13	26	0	4	43
AETC	25	40	0	34	99
Blank/Other	53	17	0	5	75
Total	171	298	17	68	554

Question #5d: “To what flight/position are you currently assigned?”

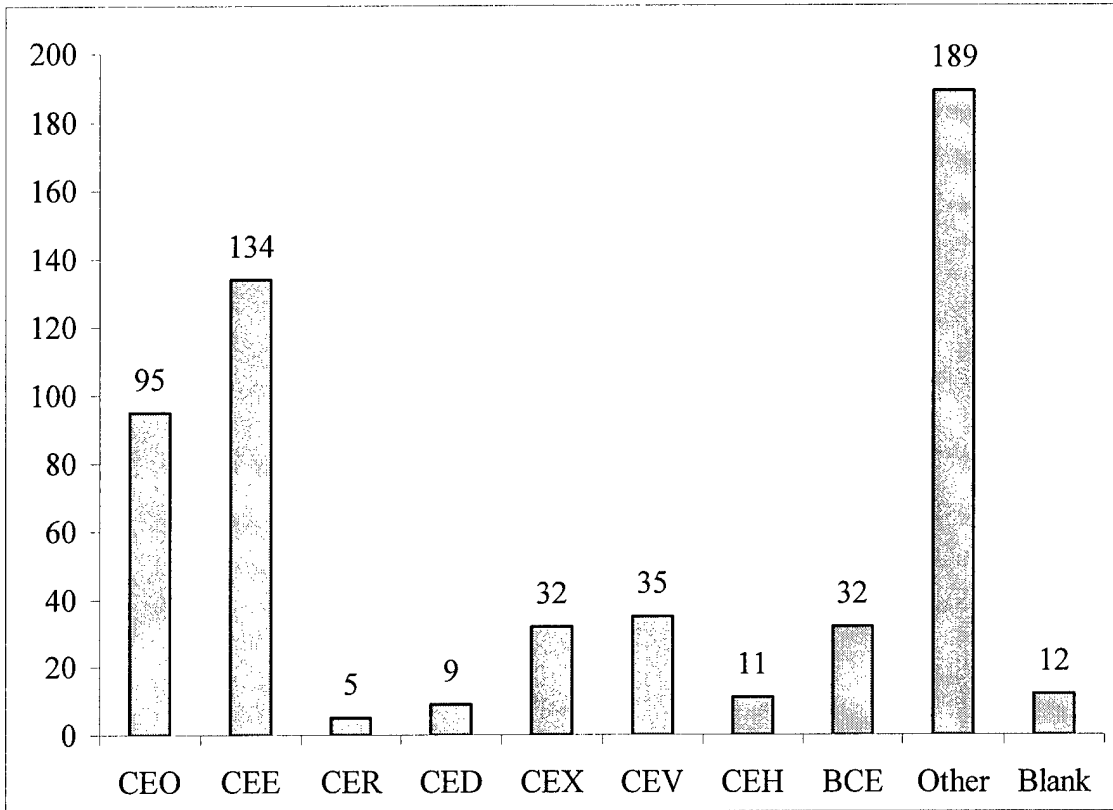


Figure B-4: Number of Responses to Question #5d

Table B-4: Breakdown of Responses by Flight/Position to Question #5d

Flight/Position	# Assigned	% of Total
Operations Flight (CEO)	95	17.15%
Engineering Flight (CEE)	134	24.19%
Resources (CER)	5	0.90%
Explosive Ordnance Disposal Flight (CED)	9	1.62%
Readiness Flight (CEX)	32	5.78%
Environmental Flight (CEV)	35	6.32%
Housing Flight (CEH)	11	1.99%
Base Civil Engineer (BCE)	32	5.78%
Other	189	34.12%
Blank	12	2.17%
Total	554	100%

Question #5e: “How many times in your career have you been deployed to a non-combat operation such as a humanitarian mission, a natural disaster relief mission, or other similar type of non-combat contingency operation?”

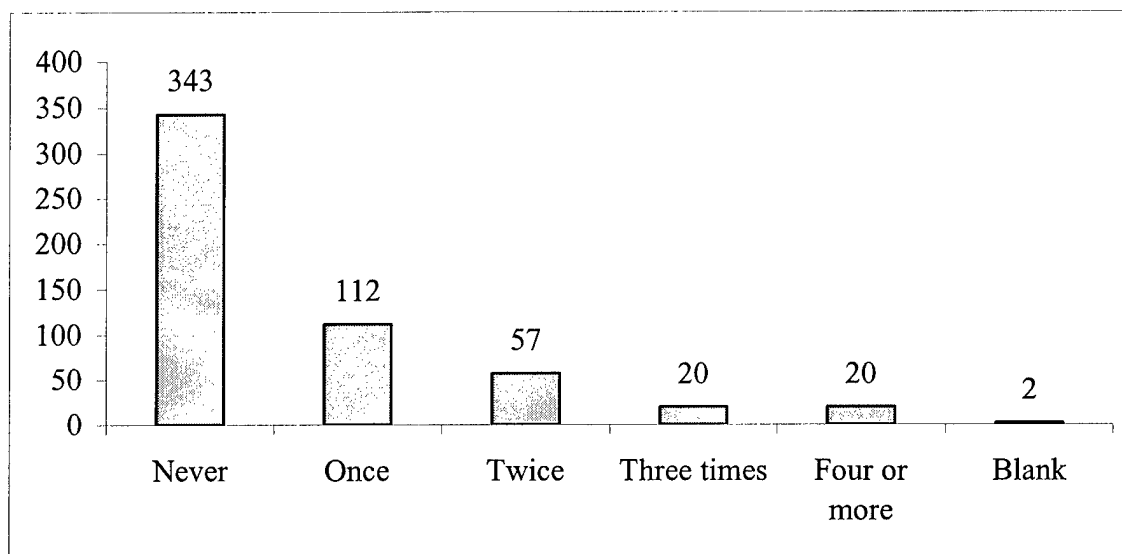


Figure B-5: Total Number of Responses to Question #5e

Table B-5: Breakdown of Non-Combat Deployed Responses to Question #5e

	Never	Once	Twice	Three times	Four or more times	Blank
2 Lt	62	2	1	0	0	0
1 Lt	70	8	1	0	0	0
Capt	120	54	18	6	7	1
Major	43	27	17	5	5	1
Lt Col	32	16	16	7	4	0
Col	16	5	4	2	4	0
Total	343	112	57	20	20	2
ACC	84	17	11	6	4	0
AMC	33	9	6	1	1	0
AFMC	34	13	5	1	1	1
AFSPC	17	6	3	3	2	0
PACAF	53	15	6	1	3	1
USAFE	18	15	8	2	0	0
AETC	66	17	11	2	3	0
Other	36	19	6	4	6	0
Blank	2	1	1	0	0	0
Total	343	112	57	20	20	2

Question #5f: “How many times in your career have you been deployed to a combat operation such as a small scale contingency, a peacekeeping mission, a low intensity conflict, a major theater war, or a similar combat contingency operation?”

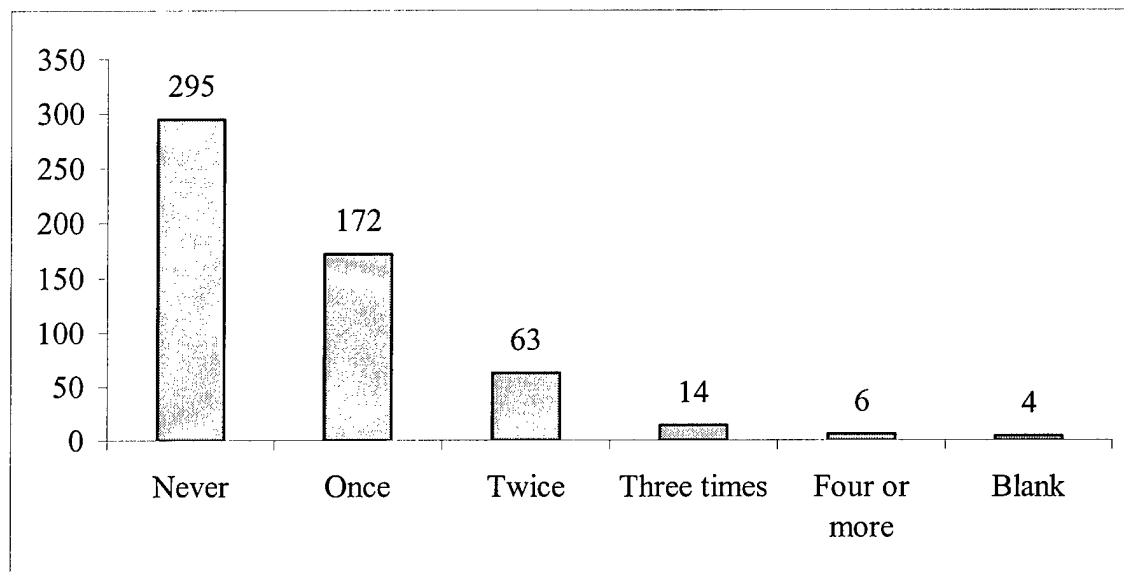


Figure B-6: Total Number of Responses to Question #5f

Table B-6: Breakdown of Combat Deployed Responses to Question #5f

	Never	Once	Twice	Three times	Four or more	Blank
2 Lt	61	4	0	0	0	0
1 Lt	56	23	0	0	0	0
Capt	85	76	35	4	4	2
Major	33	39	18	7	0	1
Lt Col	43	22	8	1	1	0
Col	17	8	2	2	1	1
Total	295	172	63	14	6	4
ACC	63	37	15	3	3	1
AMC	30	13	5	1	0	1
AFMC	32	12	7	2	0	2
AFSPC	17	10	3	1	0	0
PACAF	35	31	7	4	2	0
USAFE	11	22	9	1	0	0
AETC	64	28	6	0	1	0
Other	41	18	10	2	0	0
Blank	2	1	1	0	0	0
Total	295	172	63	14	6	4

Combination of Responses to Questions #5e and #5f:

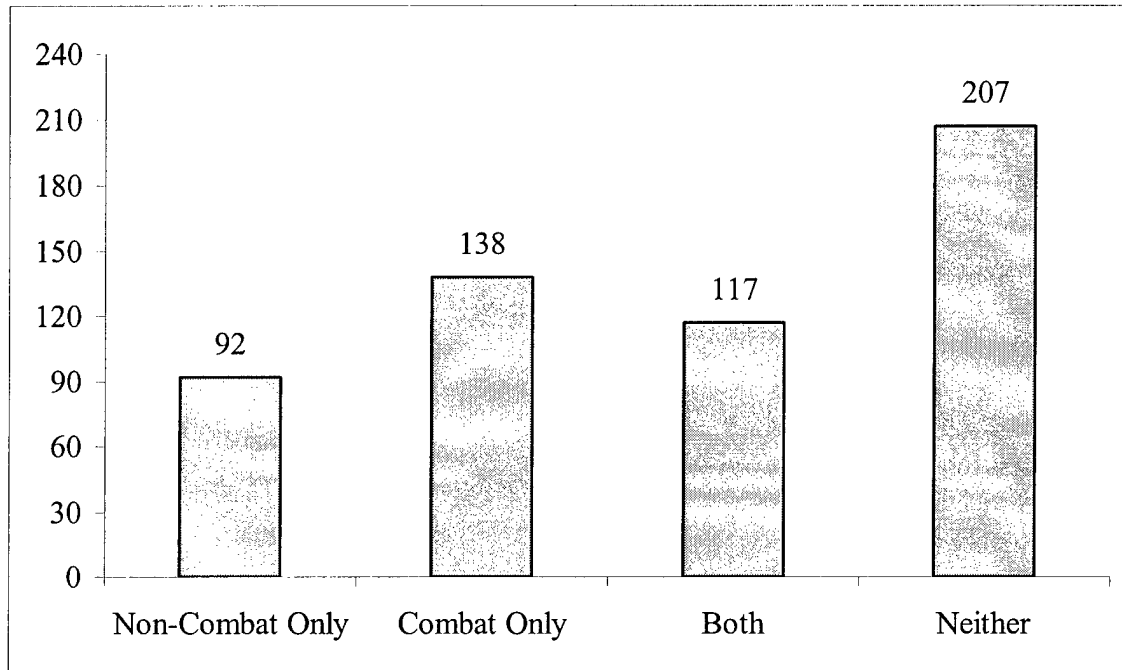


Figure B-7: Responses to Questions #5e and #5f

Table B-7: Breakdown of Responses by Rank to Question #5e and #5f

	Non-Combat Only	Combat Only	Both	Neither
2 Lt	3	4	0	58
1 Lt	7	21	2	49
Capt	34	68	51	53
Major	19	29	35	15
Lt Col	21	10	22	22
Col	8	6	7	10
Total	92	138	117	207

Question #5g: “How many days have you been deployed to a contingency in the past 12 months?”

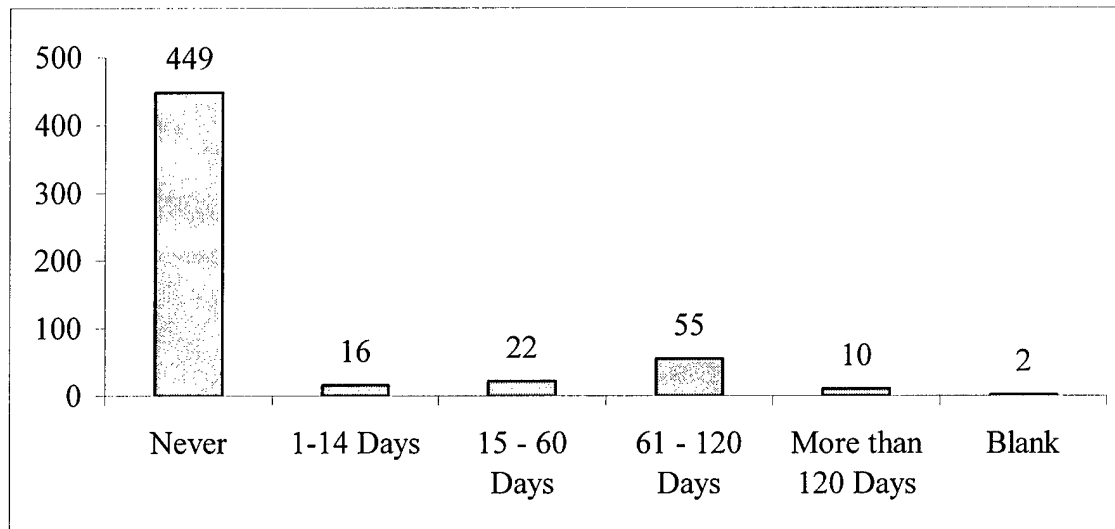


Figure B-8: Total Number of Responses to Question #5g

Table B-8: Breakdown of Responses to Question #5g

	Never	1-14 Days	15 - 60 Days	61 - 120 Days	More than 120 Days	Blank
2 Lt	59	1	0	5	0	0
1 Lt	57	2	4	15	1	0
Capt	154	6	13	26	6	1
Major	80	4	4	8	1	1
Lt Col	70	1	1	1	2	0
Col	29	2	0	0	0	0
Total	449	16	22	55	10	2
ACC	96	1	4	17	3	1
AMC	41	3	1	5	0	0
AFMC	45	0	2	6	1	1
AFSPC	24	0	0	6	1	0
PACAF	61	3	6	8	1	0
USAFE	27	5	4	4	3	0
AETC	87	3	3	5	1	0
Other	64	1	2	4	0	0
Blank	4	0	0	0	0	0
Total	449	16	22	55	10	2

Question #5h: “How long have you been assigned to your current duty location?”

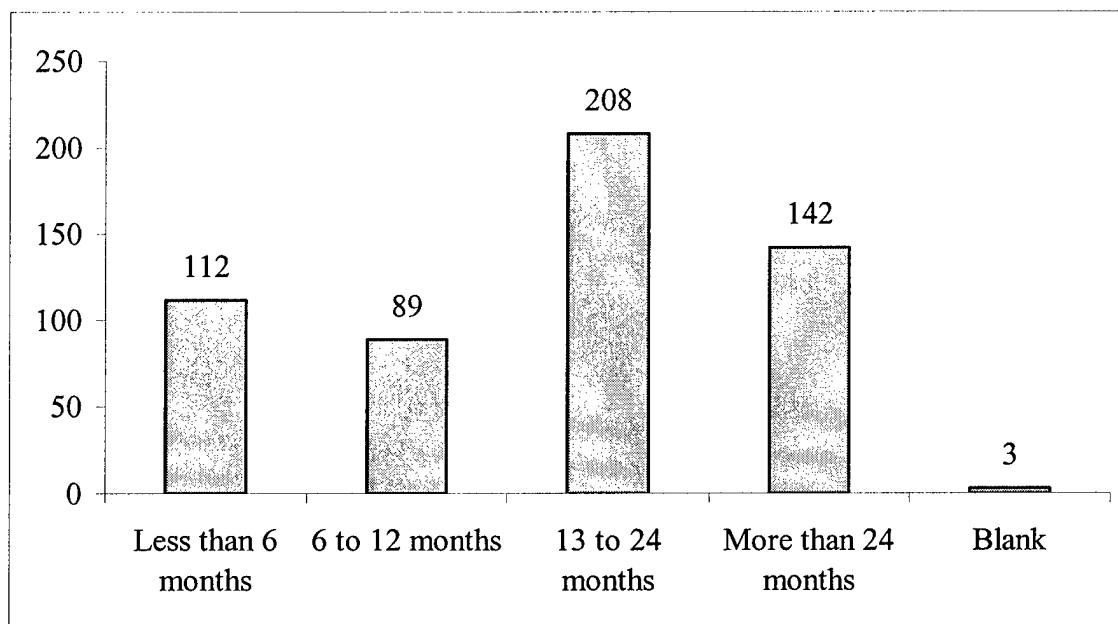


Figure B-9: Total Number of Responses to Question #5h

Table B-9: Breakdown of Responses to Question #5h

	Less than 6 months	6 to 12 months	13 to 24 months	More than 24 months	Blank
2 Lt	0	19	46	0	0
1 Lt	20	11	14	34	0
Capt	34	38	78	56	0
Major	27	14	28	28	1
Lt Col	24	5	28	16	2
Col	7	2	14	8	0
Total	112	89	208	142	3

Question #5i: “Have you ever read the CE Officer Field Education Training Plan (CFETP) guidance?”

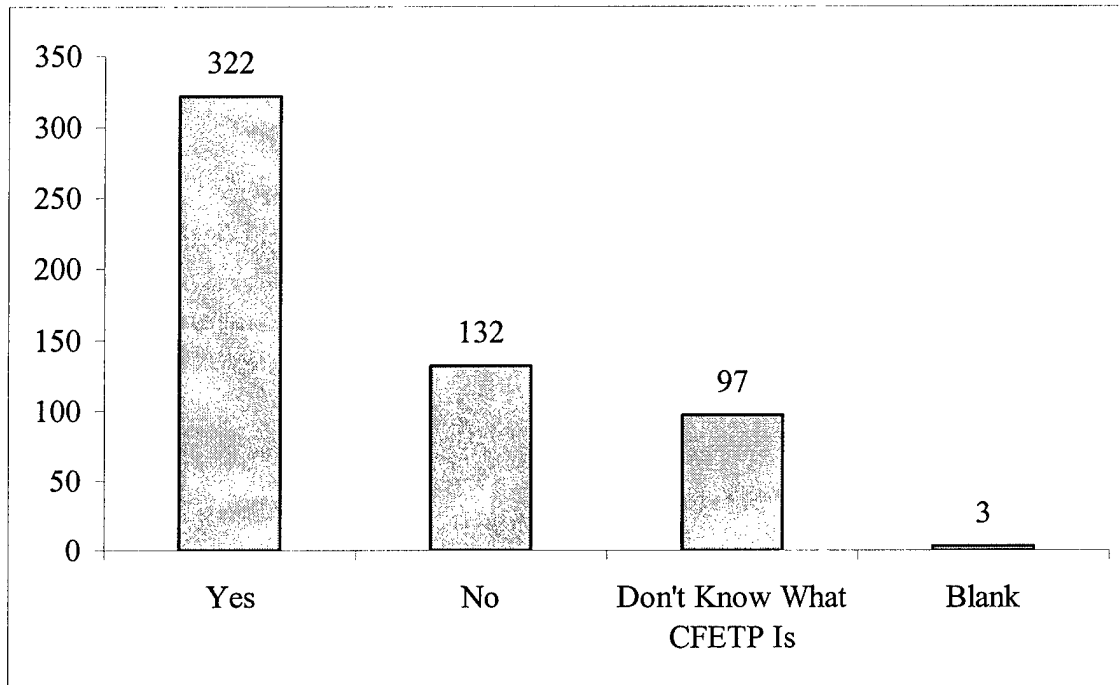


Figure B-10: Total Number of Responses to Question #5i

Table B-10: Breakdown of Responses to Question #5i

	Yes	No	Don't Know What CFETP Is	Blank
2 Lt	28	20	17	0
1 Lt	39	19	21	0
Capt	120	43	41	2
Major	61	24	12	1
Lt Col	57	14	4	0
Col	17	12	2	0
Total	322	132	97	3

Appendix C: Factor Analysis Pattern Matrix Tables

Table C-1: Silver Flag Factor Analysis

Statement	Factor		
	Realism and Quality	Priority	Quantity
Q1I	0.841	0.054	-0.063
Q1JREV	0.811	-0.120	0.055
Q1L	0.780	-0.034	0.084
Q1H	0.769	0.085	0.057
Q1O	0.768	0.037	0.163
Q1DREV	0.731	-0.136	-0.185
Q1RREV	0.694	0.129	-0.090
Q1M	0.635	0.142	0.151
Q1PREV	0.543	0.214	0.014
Q1FREV	0.491	0.025	0.330
Q1B	0.095	0.749	0.083
Q1Q	-0.014	0.724	-0.039
Q1NREV	0.023	0.711	-0.036
Q1G	-0.101	0.120	0.831
Q1K	0.164	-0.154	0.820

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization

Table C-2: HST Factor Analysis

Statement	Factor		
	1	2	3
Q2K	0.938	-0.025	-0.003
Q2J	0.870	-0.119	0.066
Q2D	0.864	0.065	-0.101
Q2F	0.827	-0.083	0.029
Q2Q	0.798	0.088	0.084
Q2H	0.761	0.151	-0.002
Q2UREV	0.705	0.111	0.125
Q2MREV	0.560	0.126	0.166
Q2RREV	0.509	0.217	0.086
Q2G	0.474	0.408	-0.035
Q2N	0.385	0.125	0.380
Q2OREV	0.040	0.774	0.069
Q2IREV	-0.047	0.671	0.007
Q2T	0.087	0.645	0.064
Q2SREV	0.369	0.414	-0.018
Q2LREV	0.164	-0.053	0.680
Q2EREV	-0.095	0.056	0.640
Q2PREV	0.261	0.030	0.449

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization

Note: Factors are not named in this chart, as statements did not load against the constructs of quantity, realism, priority, or quality.

Table C-3: CESS Factor Analysis

Statement	Factor		
	1	2	3
Q3KREV	0.801	-0.031	-0.038
Q3S	0.761	-0.160	0.073
Q3HREV	0.750	-0.060	-0.096
Q3R	0.742	0.102	0.030
Q3L	0.737	-0.088	0.124
Q3P	0.730	0.089	0.123
Q3GREV	0.709	0.216	-0.057
Q3OREV	0.687	-0.106	0.001
Q3J	0.647	-0.013	0.153
Q3FREV	0.511	0.212	-0.029
Q3D	0.505	0.385	-0.008
Q3NREV	-0.075	0.855	-0.039
Q3EREV	-0.039	0.805	0.017
Q3QREV	-0.026	0.657	0.135
Q3B	0.356	0.573	-0.006
Q3M	0.034	-0.013	0.914
Q3I	-0.039	0.006	0.876
Q3C	0.225	0.174	0.311

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Used on all factor analysis tables

Note: Factors are not named in this chart, as statements did not load against the constructs of quantity, realism, priority, or quality.

Table C-4: CESS Factor Analysis

Construct	Silver Flag Statement #	HST Statement #	CESS Statement #
Quantity	1c(-); 1g(+); 1k(+)	2d(+); 2m(-); 2s(-)	3b(+); 3d(+); 3e(-); 3n(-); 3q(-)
Realism	1d(-); 1i(+); 1j(-); 1l(+); 1m(+); 1p(-)	2e(-); 2f(+); 2j(+); 2l(-); 2n(+); 2p(-)	3h(-); 3j(+); 3k(-); 3l(+); 3o(-); 3s(+)
Priority	1b(+); 1e(-); 1n(-); 1q(+)	2g(+); 2i(-); 2o(-); 2t(+)	3c(+); 3i(+); 3m(+);
Quality	1f(-); 1h(+); 1o(+); 1r(-)	2h(+); 2k(+); 2q(+); 2r(-); 2u(-)	3f(-); 3g(-); 3p(+); 3r(+)

Appendix D: Supporting Information Tables for SF, HST, & CESS

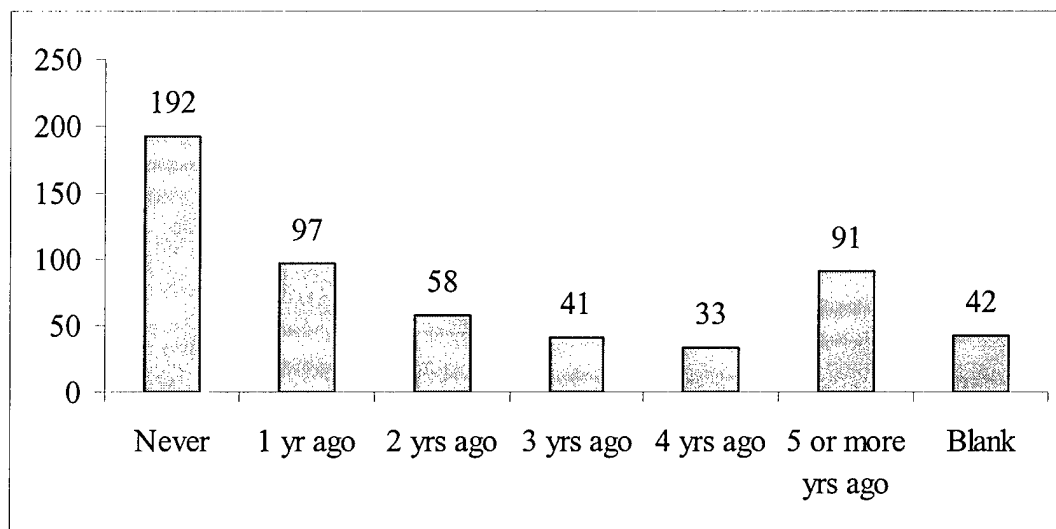


Figure D-1: Silver Flag Training Attendance Responses

Table D-1: Breakdown of Responses to SF Training

	Never	1 yr ago	2 yrs ago	3 yrs ago	4 yrs ago	5 or more yrs ago	Blank	Total
2 Lt	45	18	0	0	0	0	2	65
1 Lt	37	21	15	1	0	0	5	79
Capt	70	35	24	21	16	21	19	206
Major	16	10	7	11	9	36	9	98
Lt Col	9	13	11	6	5	24	7	75
Col	15	0	1	2	3	10	0	31
Total	192	97	58	41	33	91	42	554

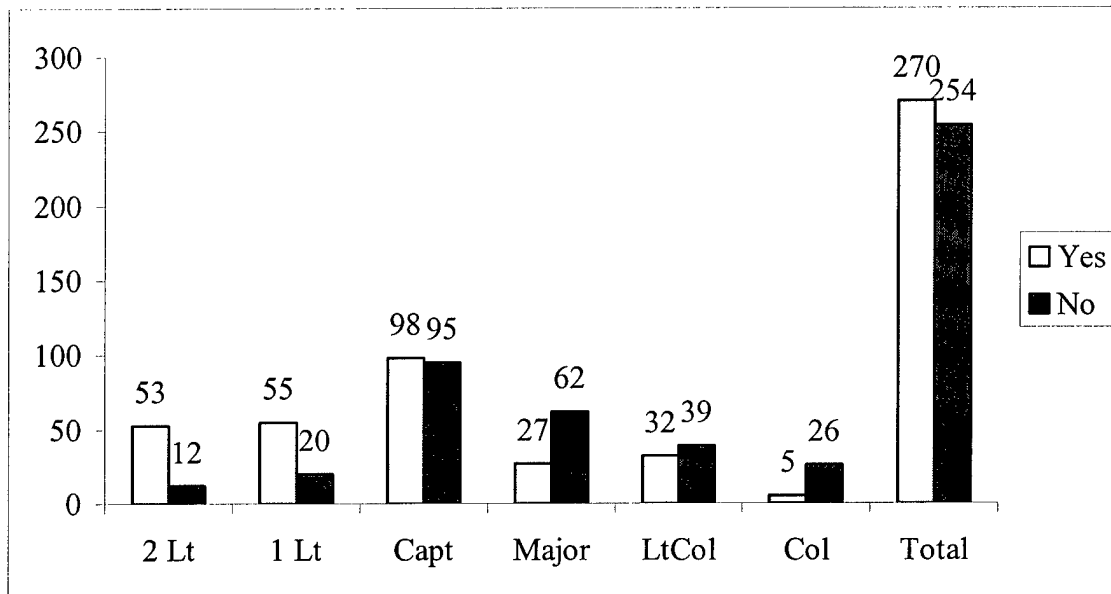


Figure D-2: HST Participation

Table D-2: Breakdown of HST Participation

	Yes	No	Blank	Total
2 Lt	53	12	0	65
1 Lt	55	20	4	79
Capt	98	95	13	206
Major	27	62	9	98
Lt Col	32	39	4	75
Col	5	26	0	31
Total	270	254	30	554

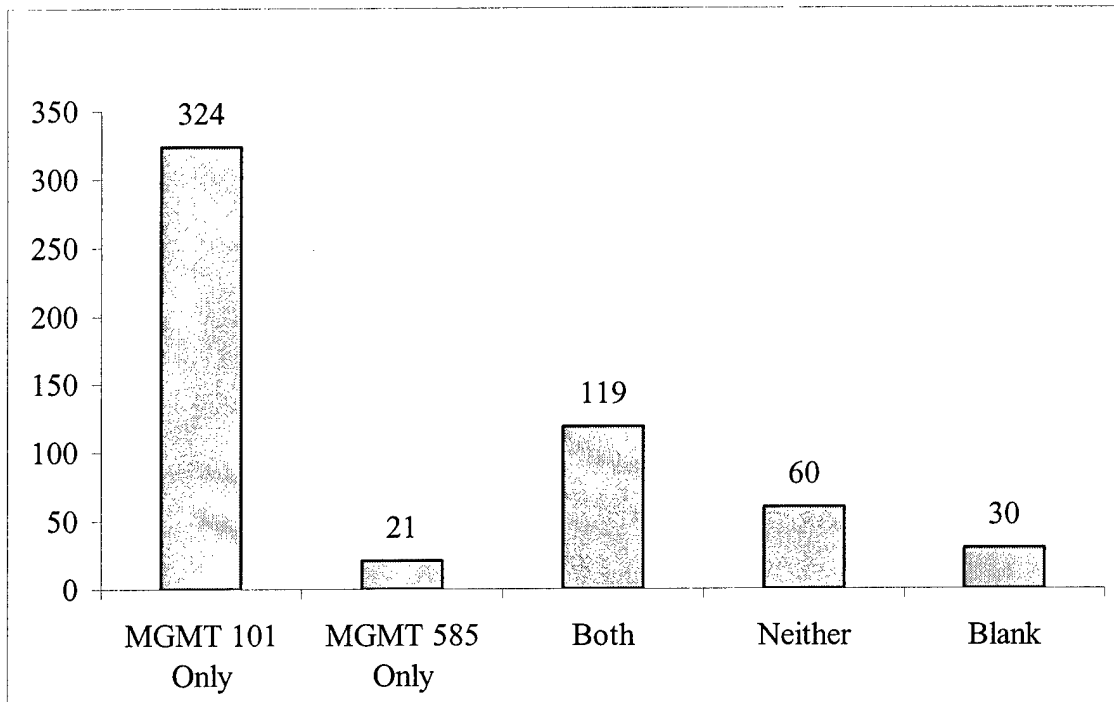


Figure D-3: CESS Course Participation

Table D-3: Breakdown of CESS Course Enrollment

	MGMT 101 Only	MGMT 585 Only	Both	Neither	Blank	Total
2 Lt	61	0	0	4	0	65
1 Lt	72	0	0	3	4	79
Capt	161	3	21	8	13	206
Major	13	6	65	5	9	98
Lt Col	11	10	29	21	4	75
Col	6	2	4	19	0	31
Total	324	21	119	60	30	554

Appendix E: Training Task Response Breakdown

Table E-1: Training Task Likert Scale

Importance or relevance to mission				
Unimportant	Minor	Important	Very Important	Critical
1	2	3	4	5
Adequacy or Effectiveness of Current Training				
Terrible	Poor	Fair	Good	Excellent
1	2	3	4	5

Table E-2: Training Tasks (sorted by mission relevance)

#	TRAINING TASKS (sorted by relevance)	A	N	B	N	Diff	Sig
1	Nuclear, Biological and Chemical Defense Training (<i>i.e.</i> , Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	4.43	543	3.84	529	0.59	0.000
2	Know Protection from Terrorism Practices	4.39	546	3.18	537	1.22	0.000
3	Bare Base Planning, Development, and Layout	4.35	541	3.51	529	0.84	0.000
4	Harvest Eagle/Falcon Overview (<i>i.e.</i> , know types of materials available, how to get; how to setup; etc)	4.29	541	3.42	529	0.87	0.000
5	Organization and procedures of command centers (<i>i.e.</i> , Wing Operations Center; Survival Recovery Center; Damage Control Center)	4.28	540	3.56	528	0.72	0.000
6	Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	4.27	546	3.40	536	0.87	0.000
7	Self-Aid/Buddy Care and CPR Training	4.25	544	3.64	532	0.61	0.000
8	Communications among organizations	4.24	542	3.18	530	1.06	0.000
9	Deployment Experiences	4.20	546	3.25	531	0.95	0.000
10	Field Sanitation and Health (<i>i.e.</i> , personal hygiene, control of diseases, water purification, kitchen and mess sanitation)	4.19	542	3.57	532	0.63	0.000
11	Damage Assessment and Response Team (DART) Operations	4.08	545	3.72	531	0.37	0.000
12	Family Preparation (Know how to prepare for deployments)	4.06	541	3.38	528	0.68	0.000
13	Personal Security (<i>i.e.</i> , Work Party Security, Convoy Procedures, Defensive Fighting Positions)	4.05	548	3.04	536	1.01	0.000
14	Weapons/Small Arms Qualification	4.05	547	3.75	537	0.30	0.000
15	Electrical Distribution and Generation System Overview	4.04	541	3.41	528	0.63	0.000
16	Deployment Procedures (<i>i.e.</i> , Recall Procedures; Personnel Processing; Equipment Marshaling)	4.03	543	3.45	529	0.58	0.000
17	Water Distribution System and Reverse Osmosis Water Purification Unit (ROWPU) Operations	4.01	543	3.51	531	0.50	0.000
18	Rapid Runway Repair (RRR) Overview (<i>i.e.</i> , Minimum Operating Strip (MOS) Selection; Repair Quality Criteria; Emergency Airfield Lighting System (EALS); Mobile Aircraft Arresting System)	3.98	546	3.91	529	0.07	0.215
19	Contingency Contracting	3.97	545	2.44	528	1.53	0.000
20	Explosive Ordnance Reconnaissance Training	3.96	544	3.51	533	0.45	0.000

#	TRAINING TASKS (sorted by relevance)	A	N	B	N	Diff	Sig
21	Wartime Construction Management	3.94	538	3.01	528	0.93	0.000
22	Threat Assessments	3.94	546	2.84	535	1.10	0.000
23	Resource Protection (<i>i.e.</i> , Dispersal; Camouflage, Concealment and Deception; Blackout Methods; Facility Hardening)	3.92	546	3.43	536	0.49	0.000
24	Familiarization with Civil Engineer doctrine.	3.92	547	2.90	539	1.02	0.000
25	Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	3.86	543	2.37	532	1.49	0.000
26	Joint Service Operations (with Army, Navy, Marines)	3.85	543	2.46	531	1.38	0.000
27	Air Base Defense	3.82	547	2.99	537	0.83	0.000
28	Airlift Process (Know what it is and how to get airlift arranged)	3.81	541	2.10	527	1.71	0.000
29	Workforce work/rest cycles	3.80	540	3.15	529	0.65	0.000
30	Logistical Operations and Wartime Supply Support	3.80	542	2.38	530	1.41	0.000
31	Manpower Management	3.79	543	2.87	530	0.92	0.000
32	POL Operations Overview	3.77	545	3.22	530	0.54	0.000
33	Cross Cultural Relations (understanding other cultures)	3.72	545	2.56	530	1.16	0.000
34	Vehicle and Equipment Operations	3.70	540	3.40	532	0.31	0.000
35	Law of Armed Conflict	3.69	548	3.63	538	0.06	0.489
36	Status of Forces Agreements (Know how and when apply)	3.69	541	2.43	530	1.26	0.000
37	War Planning (the big picture)	3.68	545	2.48	530	1.20	0.000
38	Deployment Execution Order Interpretation	3.67	540	2.30	527	1.37	0.000
39	Multinational Operations (with other countries)	3.57	537	2.43	529	1.14	0.000
40	Status of Reportable Training (SORTS)	3.45	540	2.84	527	0.61	0.000
41	Contingency Environmental Management	3.41	540	2.97	529	0.45	0.000
42	Prime RIBS (Services Squadron) Operations	3.34	538	3.26	528	0.08	0.202
43	Refrigeration Unit Overview	3.31	541	3.09	527	0.23	0.000
44	Overnight Bivouac	3.23	541	3.22	529	0.00	0.759
45	Base Denial	3.16	546	2.89	537	0.27	0.000

Note: Column labeled "A" corresponds to training task question on relevancy to mission; column labeled "B" corresponds to adequacy of training received. Columns labeled "N" refer to the number of respondents to that particular question.

Note: Significant values less than 0.05 indicate that there is a significant difference in responses between column A and column B.

Table E-3: Training Tasks (sorted by training adequacy – worst to best)

#	Training Tasks (sorted by training adequacy - worst to best)	A	N	B	N	Diff	Sig
1	Airlift Process (Know what it is and how to get airlift arranged)	3.81	541	2.10	527	1.71	0.000
2	Deployment Execution Order Interpretation	3.67	540	2.30	527	1.37	0.000
3	Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	3.86	543	2.37	532	1.49	0.000
4	Logistical Operations and Wartime Supply Support	3.80	542	2.38	530	1.41	0.000
5	Multinational Operations (with other countries)	3.57	537	2.43	529	1.14	0.000
6	Status of Forces Agreements (Know how and when apply)	3.69	541	2.43	530	1.26	0.000
7	Contingency Contracting	3.97	545	2.44	528	1.53	0.000
8	Joint Service Operations (with Army, Navy, Marines)	3.85	543	2.46	531	1.38	0.000
9	War Planning (the big picture)	3.68	545	2.48	530	1.20	0.000
10	Cross Cultural Relations (understanding other cultures)	3.72	545	2.56	530	1.16	0.000
11	Threat Assessments	3.94	546	2.84	535	1.10	0.000
12	Status of Reportable Training (SORTS)	3.45	540	2.84	527	0.61	0.000
13	Manpower Management	3.79	543	2.87	530	0.92	0.000
14	Base Denial	3.16	546	2.89	537	0.27	0.000
15	Familiarization with Civil Engineer doctrine.	3.92	547	2.90	539	1.02	0.000
16	Contingency Environmental Management	3.41	540	2.97	529	0.45	0.000
17	Air Base Defense	3.82	547	2.99	537	0.83	0.000
18	Wartime Construction Management	3.94	538	3.01	528	0.93	0.000
19	Personal Security (<i>i.e.</i> , Work Party Security, Convoy Procedures, Defensive Fighting Positions)	4.05	548	3.04	536	1.01	0.000
20	Refrigeration Unit Overview	3.31	541	3.09	527	0.23	0.000
21	Workforce work/rest cycles	3.80	540	3.15	529	0.65	0.000
22	Know Protection from Terrorism Practices	4.39	546	3.18	537	1.22	0.000
23	Communications among organizations	4.24	542	3.18	530	1.06	0.000
24	POL Operations Overview	3.77	545	3.22	530	0.54	0.000
25	Overnight Bivouac	3.23	541	3.22	529	0.00	0.759

#	Training Tasks (sorted by training adequacy - worst to best)	A	N	B	N	Diff	Sig
26	Deployment Experiences	4.20	546	3.25	531	0.95	0.000
27	Prime RIBS (Services Squadron) Operations	3.34	538	3.26	528	0.08	0.202
28	Family Preparation (Know how to prepare for deployments)	4.06	541	3.38	528	0.68	0.000
29	Vehicle and Equipment Operations	3.70	540	3.40	532	0.31	0.000
30	Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	4.27	546	3.40	536	0.87	0.000
31	Electrical Distribution and Generation System Overview	4.04	541	3.41	528	0.63	0.000
32	Harvest Eagle/Falcon Overview (<i>i.e.</i> , know types of materials available, how to get; how to setup; etc)	4.29	541	3.42	529	0.87	0.000
33	Resource Protection (<i>i.e.</i> , Dispersal; Camouflage, Concealment and Deception; Blackout Methods; Facility Hardening)	3.92	546	3.43	536	0.49	0.000
34	Deployment Procedures (<i>i.e.</i> , Recall Procedures; Personnel Processing; Equipment Marshaling)	4.03	543	3.45	529	0.58	0.000
35	Explosive Ordnance Reconnaissance Training	3.96	544	3.51	533	0.45	0.000
36	Water Distribution System and Reverse Osmosis Water Purification Unit (ROWPU) Operations	4.01	543	3.51	531	0.50	0.000
37	Bare Base Planning, Development, and Layout	4.35	541	3.51	529	0.84	0.000
38	Organization and procedures of command centers (<i>i.e.</i> , Wing Operations Center; Survival Recovery Center; Damage Control Center)	4.28	540	3.56	528	0.72	0.000
39	Field Sanitation and Health (<i>i.e.</i> , personal hygiene, control of diseases, water purification, kitchen and mess sanitation)	4.19	542	3.57	532	0.63	0.000
40	Law of Armed Conflict	3.69	548	3.63	538	0.06	0.489
41	Self-Aid/Buddy Care and CPR Training	4.25	544	3.64	532	0.61	0.000
42	Damage Assessment and Response Team (DART) Operations	4.08	545	3.72	531	0.37	0.000
43	Weapons/Small Arms Qualification	4.05	547	3.75	537	0.30	0.000
44	Nuclear, Biological and Chemical Defense Training (<i>i.e.</i> , Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	4.43	543	3.84	529	0.59	0.000
45	Rapid Runway Repair (RRR) Overview (<i>i.e.</i> , Minimum Operating Strip (MOS) Selection; Repair Quality Criteria; Emergency Airfield Lighting System (EALS); Mobile Aircraft Arresting System)	3.98	546	3.91	529	0.07	0.215

Note: Column labeled “A” corresponds to training task question on relevancy to mission; column labeled “B” corresponds to adequacy of training received. Columns labeled “N” refer to the number of respondents to that particular question.

Note: Significant values less than 0.05 indicate that there is a significant difference in responses between column A and column B.

Table E-4: Training Tasks (sorted by difference – large to small)

#	Training Tasks (sorted by difference)	A	N	B	N	Diff	Sig
1	Airlift Process (Know what it is and how to get airlift arranged)	3.81	541	2.10	527	1.71	0.000
2	Contingency Contracting	3.97	545	2.44	528	1.53	0.000
3	Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	3.86	543	2.37	532	1.49	0.000
4	Logistical Operations and Wartime Supply Support	3.80	542	2.38	530	1.41	0.000
5	Joint Service Operations (with Army, Navy, Marines)	3.85	543	2.46	531	1.38	0.000
6	Deployment Execution Order Interpretation	3.67	540	2.30	527	1.37	0.000
7	Status of Forces Agreements (Know how and when apply)	3.69	541	2.43	530	1.26	0.000
8	Know Protection from Terrorism Practices	4.39	546	3.18	537	1.22	0.000
9	War Planning (the big picture)	3.68	545	2.48	530	1.20	0.000
10	Cross Cultural Relations (understanding other cultures)	3.72	545	2.56	530	1.16	0.000
11	Multinational Operations (with other countries)	3.57	537	2.43	529	1.14	0.000
12	Threat Assessments	3.94	546	2.84	535	1.10	0.000
13	Communications among organizations	4.24	542	3.18	530	1.06	0.000
14	Familiarization with Civil Engineer doctrine.	3.92	547	2.90	539	1.02	0.000
15	Personal Security (<i>i.e.</i> , Work Party Security, Convoy Procedures, Defensive Fighting Positions)	4.05	548	3.04	536	1.01	0.000
16	Deployment Experiences	4.20	546	3.25	531	0.95	0.000
17	Wartime Construction Management	3.94	538	3.01	528	0.93	0.000
18	Manpower Management	3.79	543	2.87	530	0.92	0.000
19	Harvest Eagle/Falcon Overview (<i>i.e.</i> , know types of materials available, how to get; how to setup; etc)	4.29	541	3.42	529	0.87	0.000
20	Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	4.27	546	3.40	536	0.87	0.000
21	Bare Base Planning, Development, and Layout	4.35	541	3.51	529	0.84	0.000
22	Air Base Defense	3.82	547	2.99	537	0.83	0.000
23	Organization and procedures of command centers (<i>i.e.</i> , Wing Operations Center; Survival Recovery Center; Damage Control Center)	4.28	540	3.56	528	0.72	0.000

#	Training Tasks (sorted by difference)	A	N	B	N	Diff	Sig
24	Family Preparation (Know how to prepare for deployments)	4.06	541	3.38	528	0.68	0.000
25	Workforce work/rest cycles	3.80	540	3.15	529	0.65	0.000
26	Electrical Distribution and Generation System Overview	4.04	541	3.41	528	0.63	0.000
27	Field Sanitation and Health (<i>i.e.</i> , personal hygiene, control of diseases, water purification, kitchen and mess sanitation)	4.19	542	3.57	532	0.63	0.000
28	Status of Reportable Training (SORTS)	3.45	540	2.84	527	0.61	0.000
29	Self-Aid/Buddy Care and CPR Training	4.25	544	3.64	532	0.61	0.000
30	Nuclear, Biological and Chemical Defense Training (<i>i.e.</i> , Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	4.43	543	3.84	529	0.59	0.000
31	Deployment Procedures (<i>i.e.</i> , Recall Procedures; Personnel Processing; Equipment Marshaling)	4.03	543	3.45	529	0.58	0.000
32	POL Operations Overview	3.77	545	3.22	530	0.54	0.000
33	Water Distribution System and Reverse Osmosis Water Purification Unit (ROWPU) Operations	4.01	543	3.51	531	0.50	0.000
34	Resource Protection (<i>i.e.</i> , Dispersal; Camouflage, Concealment and Deception; Blackout Methods; Facility Hardening)	3.92	546	3.43	536	0.49	0.000
35	Explosive Ordnance Reconnaissance Training	3.96	544	3.51	533	0.45	0.000
36	Contingency Environmental Management	3.41	540	2.97	529	0.45	0.000
37	Damage Assessment and Response Team (DART) Operations	4.08	545	3.72	531	0.37	0.000
38	Vehicle and Equipment Operations	3.70	540	3.40	532	0.31	0.000
39	Weapons/Small Arms Qualification	4.05	547	3.75	537	0.30	0.000
40	Base Denial	3.16	546	2.89	537	0.27	0.000
41	Refrigeration Unit Overview	3.31	541	3.09	527	0.23	0.000
42	Prime RIBS (Services Squadron) Operations	3.34	538	3.26	528	0.08	0.202
43	Rapid Runway Repair (RRR) Overview (<i>i.e.</i> , Minimum Operating Strip (MOS) Selection; Repair Quality Criteria; Emergency Airfield Lighting System (EALS); Mobile Aircraft Arresting System)	3.98	546	3.91	529	0.07	0.215
44	Law of Armed Conflict	3.69	548	3.63	538	0.06	0.489
45	Overnight Bivouac	3.23	541	3.22	529	0.00	0.759

Note: Column labeled "A" corresponds to training task question on relevancy to mission; column labeled "B" corresponds to adequacy of training received. Columns labeled "N" refer to the number of respondents to that particular question.

Note: Significant values less than 0.05 indicate that there is a significant difference in responses between column A and column B

Table E-5: Deployed vs Non-Deployed Training Task Results

Training Tasks (deploy vs non deploy)	Statement	Status	N	Mean	Significant Difference
Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	Q4_1_A	Not Deployed	191	4.241	0.511
		Deployed	339	4.292	
	Q4_1_B	Not Deployed	185	3.297	0.033*
		Deployed	335	3.469	
Familiarization with Civil Engineer doctrine.	Q4_2_A	Not Deployed	191	3.853	0.304
		Deployed	339	3.941	
	Q4_2_B	Not Deployed	187	2.973	0.231
		Deployed	335	2.863	
Know Protection from Terrorism Practices	Q4_3_A	Not Deployed	193	4.394	0.988
		Deployed	336	4.393	
	Q4_3_B	Not Deployed	189	3.296	0.013*
		Deployed	331	3.091	
Law of Armed Conflict	Q4_4_A	Not Deployed	193	3.710	0.665
		Deployed	338	3.672	
	Q4_4_B	Not Deployed	189	3.614	0.547
		Deployed	332	3.663	
Personal Security (<i>i.e.</i> , Work Party Security, Convoy Procedures, Defensive Fighting Positions)	Q4_5_A	Not Deployed	193	4.010	0.457
		Deployed	338	4.065	
	Q4_5_B	Not Deployed	188	3.080	0.633
		Deployed	331	3.036	
Air Base Defense	Q4_6_A	Not Deployed	193	3.881	0.223
		Deployed	337	3.777	
	Q4_6_B	Not Deployed	188	2.973	0.618
		Deployed	332	3.018	
Weapons/Small Arms Qualification	Q4_7_A	Not Deployed	192	4.026	0.732
		Deployed	338	4.053	
	Q4_7_B	Not Deployed	187	3.658	0.115
		Deployed	333	3.805	
Threat Assessments	Q4_8_A	Not Deployed	193	3.922	0.806
		Deployed	337	3.941	
	Q4_8_B	Not Deployed	188	2.867	0.547
		Deployed	330	2.815	
Base Denial	Q4_9_A	Not Deployed	192	3.224	0.241
		Deployed	337	3.113	
	Q4_9_B	Not Deployed	187	2.818	0.103
		Deployed	333	2.952	

Training Tasks (deploy vs non deploy)	Statement	Status	N	Mean	Significant Difference
Resource Protection (<i>i.e.</i> , Dispersal; Camouflage, Concealment and Deception; Blackout Methods; Facility Hardening)	Q4_10_A	Not Deployed	193	3.938	0.754
		Deployed	337	3.911	
	Q4_10_B	Not Deployed	187	3.471	0.632
		Deployed	332	3.431	
Deployment Experiences	Q4_11_A	Not Deployed	191	4.073	0.008*
		Deployed	338	4.275	
	Q4_11_B	Not Deployed	183	2.973	0.000*
		Deployed	331	3.408	
Contingency Contracting	Q4_12_A	Not Deployed	191	3.733	0.000*
		Deployed	337	4.134	
	Q4_12_B	Not Deployed	183	2.426	0.858
		Deployed	328	2.442	
Cross Cultural Relations (understanding other cultures)	Q4_13_A	Not Deployed	191	3.681	0.462
		Deployed	337	3.742	
	Q4_13_B	Not Deployed	182	2.654	0.107
		Deployed	331	2.508	
War Planning (the big picture)	Q4_14_A	Not Deployed	191	3.743	0.189
		Deployed	337	3.635	
	Q4_14_B	Not Deployed	183	2.514	0.538
		Deployed	330	2.461	
Status of Reportable Training (SORTS)	Q4_15_A	Not Deployed	187	3.449	0.859
		Deployed	336	3.435	
	Q4_15_B	Not Deployed	180	2.756	0.203
		Deployed	330	2.876	
Airlift Process (Know what it is and how to get airlift arranged)	Q4_16_A	Not Deployed	190	3.616	0.001*
		Deployed	334	3.913	
	Q4_16_B	Not Deployed	183	2.175	0.160
		Deployed	328	2.055	
Deployment Execution Order Interpretation	Q4_17_A	Not Deployed	188	3.564	0.062
		Deployed	335	3.716	
	Q4_17_B	Not Deployed	180	2.294	0.977
		Deployed	330	2.297	
Status of Forces Agreements (Know how and when apply)	Q4_18_A	Not Deployed	187	3.535	0.002*
		Deployed	337	3.772	
	Q4_18_B	Not Deployed	182	2.451	0.754
		Deployed	331	2.423	

Training Tasks (deploy vs non deploy)	Statement	Status	N	Mean	Significant Difference
Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	Q4_19_A	Not Deployed	190	3.716	0.001*
		Deployed	336	3.964	
	Q4_19_B	Not Deployed	184	2.364	0.828
		Deployed	331	2.384	
Logistical Operations and Wartime Supply Support	Q4_20_A	Not Deployed	189	3.661	0.005*
		Deployed	336	3.878	
	Q4_20_B	Not Deployed	183	2.443	0.264
		Deployed	330	2.348	
Family Preparation (Know how to prepare for deployments)	Q4_21_A	Not Deployed	189	3.926	0.004*
		Deployed	335	4.146	
	Q4_21_B	Not Deployed	182	3.264	0.024*
		Deployed	329	3.465	
Manpower Management	Q4_22_A	Not Deployed	189	3.709	0.093
		Deployed	337	3.834	
	Q4_22_B	Not Deployed	183	2.803	0.255
		Deployed	330	2.894	
Multinational Operations (with other countries)	Q4_23_A	Not Deployed	187	3.535	0.477
		Deployed	333	3.592	
	Q4_23_B	Not Deployed	182	2.401	0.696
		Deployed	330	2.433	
Joint Service Operations (with Army, Navy, Marines)	Q4_24_A	Not Deployed	190	3.721	0.022*
		Deployed	336	3.896	
	Q4_24_B	Not Deployed	183	2.481	0.671
		Deployed	331	2.444	
Prime RIBS (Services Squadron) Operations	Q4_25_A	Not Deployed	186	3.285	0.401
		Deployed	335	3.355	
	Q4_25_B	Not Deployed	182	3.269	0.927
		Deployed	329	3.261	
Harvest Eagle/Falcon Overview (<i>i.e.</i> , know types of materials available, how to get; how to setup; etc)	Q4_26_A	Not Deployed	190	4.168	0.005*
		Deployed	334	4.362	
	Q4_26_B	Not Deployed	184	3.462	0.455
		Deployed	328	3.393	
Contingency Environmental Management	Q4_27_A	Not Deployed	190	3.411	0.864
		Deployed	333	3.396	
	Q4_27_B	Not Deployed	184	2.978	0.732
		Deployed	328	2.948	

Training Tasks (deploy vs non deploy)	Statement	Status	N	Mean	Significant Difference
Wartime Construction Management	Q4_28_A	Not Deployed	189	3.847	0.026*
		Deployed	332	4.006	
	Q4_28_B	Not Deployed	184	3.022	0.804
		Deployed	327	3.000	
Bare Base Planning, Development, and Layout	Q4_29_A	Not Deployed	190	4.284	0.099
		Deployed	334	4.401	
	Q4_29_B	Not Deployed	184	3.511	0.962
		Deployed	328	3.515	
Rapid Runway Repair (RRR) Overview (<i>i.e.</i> , Minimum Operating Strip (MOS) Selection; Repair Quality Criteria; Emergency Airfield Lighting System (EALS); Mobile Aircraft Arresting System)	Q4_30_A	Not Deployed	192	4.104	0.034*
		Deployed	337	3.902	
	Q4_30_B	Not Deployed	185	3.930	0.762
		Deployed	327	3.905	
Damage Assessment and Response Team (DART) Operations	Q4_31_A	Not Deployed	192	4.083	1.000
		Deployed	336	4.083	
	Q4_31_B	Not Deployed	186	3.742	0.585
		Deployed	329	3.699	
Refrigeration Unit Overview	Q4_32_A	Not Deployed	190	3.321	0.908
		Deployed	334	3.311	
	Q4_32_B	Not Deployed	183	3.055	0.610
		Deployed	327	3.101	
Water Distribution System and Reverse Osmosis Water Purification Unit (ROWPU) Operations	Q4_33_A	Not Deployed	191	4.037	0.708
		Deployed	335	4.006	
	Q4_33_B	Not Deployed	185	3.578	0.221
		Deployed	329	3.477	
POL Operations Overview	Q4_34_A	Not Deployed	192	3.776	0.838
		Deployed	336	3.759	
	Q4_34_B	Not Deployed	184	3.217	0.959
		Deployed	329	3.222	
Electrical Distribution and Generation System Overview	Q4_35_A	Not Deployed	190	4.016	0.507
		Deployed	334	4.066	
	Q4_35_B	Not Deployed	183	3.366	0.353
		Deployed	329	3.444	
Organization and procedures of command centers (<i>i.e.</i> , Wing Operations Center; Survival Recovery Center; Damage Control Center)	Q4_36_A	Not Deployed	189	4.127	0.001*
		Deployed	334	4.368	
	Q4_36_B	Not Deployed	183	3.552	0.973
		Deployed	328	3.555	

Training Tasks (deploy vs non deploy)	Statement	Status	N	Mean	Significant Difference
Communications among organizations	Q4_37_A	Not Deployed	190	4.205	0.259
		Deployed	335	4.284	
	Q4_37_B	Not Deployed	184	3.207	0.595
		Deployed	329	3.161	
Workforce work/rest cycles	Q4_38_A	Not Deployed	188	3.835	0.459
		Deployed	335	3.773	
	Q4_38_B	Not Deployed	184	3.065	0.163
		Deployed	328	3.192	
Overnight Bivouac	Q4_39_A	Not Deployed	190	3.295	0.286
		Deployed	334	3.174	
	Q4_39_B	Not Deployed	184	3.201	0.574
		Deployed	328	3.259	
Deployment Procedures (<i>i.e.</i> , Recall Procedures; Personnel Processing; Equipment Marshaling)	Q4_40_A	Not Deployed	189	3.926	0.033*
		Deployed	337	4.089	
	Q4_40_B	Not Deployed	183	3.388	0.239
		Deployed	329	3.489	
Nuclear, Biological and Chemical Defense Training (<i>i.e.</i> , Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	Q4_41_A	Not Deployed	190	4.384	0.208
		Deployed	336	4.467	
	Q4_41_B	Not Deployed	183	3.896	0.335
		Deployed	329	3.815	
Explosive Ordnance Reconnaissance Training	Q4_42_A	Not Deployed	191	3.916	0.370
		Deployed	336	3.985	
	Q4_42_B	Not Deployed	186	3.473	0.553
		Deployed	330	3.521	
Field Sanitation and Health (<i>i.e.</i> , personal hygiene, control of diseases, water purification, kitchen and mess sanitation)	Q4_43_A	Not Deployed	189	4.095	0.018*
		Deployed	336	4.262	
	Q4_43_B	Not Deployed	185	3.514	0.354
		Deployed	330	3.588	
Self-Aid/Buddy Care and CPR Training	Q4_44_A	Not Deployed	190	4.121	0.004*
		Deployed	337	4.323	
	Q4_44_B	Not Deployed	184	3.592	0.277
		Deployed	331	3.680	
Vehicle and Equipment Operations	Q4_45_A	Not Deployed	188	3.676	0.590
		Deployed	335	3.716	
	Q4_45_B	Not Deployed	185	3.346	0.331
		Deployed	330	3.424	

*Significant (0.05 level)

Table E-6: Deployed & Non-Deployed Training Task Results (Compare A to B)

Training Tasks -- deploy & non-deploy (Compare A to B)	Statement	Status	N	Mean	Significant Difference
Prime BEEF (PB) Orientation (<i>i.e.</i> , familiarization of PB mission, team organization, equipment and training requirements, etc)	Q4_1_A	Not Deployed	185	4.23	0.000**
	Q4_1_B		185	3.30	
	Q4_1_A	Deployed	335	4.30	0.000**
	Q4_1_B		335	3.47	
Familiarization with Civil Engineer doctrine.	Q4_2_A	Not Deployed	186	3.83	0.000**
	Q4_2_B		186	2.96	
	Q4_2_A	Deployed	335	4.30	0.000**
	Q4_2_B		335	3.47	
Know Protection from Terrorism Practices	Q4_3_A	Not Deployed	189	4.38	0.000**
	Q4_3_B		189	3.30	
	Q4_3_A	Deployed	331	4.38	0.000**
	Q4_3_B		331	3.09	
Law of Armed Conflict	Q4_4_A	Not Deployed	189	3.71	0.228
	Q4_4_B		189	3.61	
	Q4_4_A	Deployed	332	3.66	1.000
	Q4_4_B		332	3.66	
Personal Security (<i>i.e.</i> , Work Party Security, Convoy Procedures, Defensive Fighting Positions)	Q4_5_A	Not Deployed	188	3.99	0.000**
	Q4_5_B		188	3.08	
	Q4_5_A	Deployed	331	4.06	0.000**
	Q4_5_B		331	3.04	
Air Base Defense	Q4_6_A	Not Deployed	188	3.88	0.000**
	Q4_6_B		188	2.97	
	Q4_6_A	Deployed	331	3.78	0.000**
	Q4_6_B		331	3.02	
Weapons/Small Arms Qualification	Q4_7_A	Not Deployed	187	4.03	0.000**
	Q4_7_B		187	3.66	
	Q4_7_A	Deployed	333	4.05	0.001**
	Q4_7_B		333	3.80	
Threat Assessments	Q4_8_A	Not Deployed	188	3.92	0.000**
	Q4_8_B		188	2.87	
	Q4_8_A	Deployed	330	3.93	0.000**
	Q4_8_B		330	2.82	
Base Denial	Q4_9_A	Not Deployed	187	3.23	0.000**
	Q4_9_B		187	2.82	
	Q4_9_A	Deployed	332	3.12	0.017*
	Q4_9_B		332	2.95	

Training Tasks -- deploy & non-deploy (Compare A to B)	Statement	Status	N	Mean	Significant Difference
Resource Protection (<i>i.e.</i> , Dispersal; Camouflage, Concealment and Deception; Blackout Methods; Facility Hardening)	Q4_10_A	Not Deployed	187	3.95	0.000**
	Q4_10_B		187	3.47	
	Q4_10_A	Deployed	332	3.91	0.000**
	Q4_10_B		332	3.43	
Deployment Experiences	Q4_11_A	Not Deployed	182	4.07	0.000**
	Q4_11_B		182	2.97	
	Q4_11_A	Deployed	331	4.28	0.000**
	Q4_11_B		331	3.41	
Contingency Contracting	Q4_12_A	Not Deployed	182	3.71	0.000**
	Q4_12_B		182	2.43	
	Q4_12_A	Deployed	328	4.14	0.000**
	Q4_12_B		328	2.44	
Cross Cultural Relations (understanding other cultures)	Q4_13_A	Not Deployed	182	3.68	0.000**
	Q4_13_B		182	2.65	
	Q4_13_A	Deployed	331	3.74	0.000**
	Q4_13_B		331	2.51	
War Planning (the big picture)	Q4_14_A	Not Deployed	183	3.73	0.000**
	Q4_14_B		183	2.51	
	Q4_14_A	Deployed	330	3.64	0.000**
	Q4_14_B		330	2.46	
Status of Reportable Training (SORTS)	Q4_15_A	Not Deployed	179	3.44	0.000**
	Q4_15_B		179	2.77	
	Q4_15_A	Deployed	330	3.43	0.000**
	Q4_15_B		330	2.88	
Airlift Process (Know what it is and how to get airlift arranged)	Q4_16_A	Not Deployed	183	3.61	0.000**
	Q4_16_B		183	2.17	
	Q4_16_A	Deployed	328	3.91	0.000**
	Q4_16_B		328	2.05	
Deployment Execution Order Interpretation	Q4_17_A	Not Deployed	180	3.56	0.000**
	Q4_17_B		180	2.29	
	Q4_17_A	Deployed	329	3.72	0.000**
	Q4_17_B		329	2.30	
Status of Forces Agreements (Know how and when apply)	Q4_18_A	Not Deployed	181	3.53	0.000**
	Q4_18_B		181	2.45	
	Q4_18_A	Deployed	331	3.77	0.000**
	Q4_18_B		331	2.42	

Training Tasks -- deploy & non-deploy (Compare A to B)	Statement	Status	N	Mean	Significant Difference
Know types of Contracting options available (<i>i.e.</i> , AFCAP, LOCAP, COE, NAVFAC, etc)	Q4_19_A	Not Deployed	184	3.69	0.000**
	Q4_19_B		184	2.36	
	Q4_19_A	Deployed	330	3.96	0.000**
	Q4_19_B		330	2.38	
Logistical Operations and Wartime Supply Support	Q4_20_A	Not Deployed	183	3.65	0.000**
	Q4_20_B		183	2.44	
	Q4_20_A	Deployed	330	3.88	0.000**
	Q4_20_B		330	2.35	
Family Preparation (Know how to prepare for deployments)	Q4_21_A	Not Deployed	182	3.92	0.000**
	Q4_21_B		182	3.26	
	Q4_21_A	Deployed	329	4.16	0.000**
	Q4_21_B		329	3.47	
Manpower Management	Q4_22_A	Not Deployed	183	3.69	0.000**
	Q4_22_B		183	2.80	
	Q4_22_A	Deployed	330	3.85	0.000**
	Q4_22_B		330	2.89	
Multinational Operations (with other countries)	Q4_23_A	Not Deployed	181	3.54	0.000**
	Q4_23_B		181	2.41	
	Q4_23_A	Deployed	327	3.59	0.000**
	Q4_23_B		327	2.43	
Joint Service Operations (with Army, Navy, Marines)	Q4_24_A	Not Deployed	183	3.72	0.000**
	Q4_24_B		183	2.48	
	Q4_24_A	Deployed	330	3.89	0.000**
	Q4_24_B		330	2.44	
Prime RIBS (Services Squadron) Operations	Q4_25_A	Not Deployed	180	3.28	1.000
	Q4_25_B		180	3.28	
	Q4_25_A	Deployed	329	3.36	0.108
	Q4_25_B		329	3.26	
Harvest Eagle/Falcon Overview (<i>i.e.</i> , know types of materials available, how to get; how to setup; etc)	Q4_26_A	Not Deployed	184	4.16	0.000**
	Q4_26_B		184	3.46	
	Q4_26_A	Deployed	328	4.37	0.000**
	Q4_26_B		328	3.39	
Contingency Environmental Management	Q4_27_A	Not Deployed	184	3.41	0.000**
	Q4_27_B		184	2.98	
	Q4_27_A	Deployed	327	3.39	0.000**
	Q4_27_B		327	2.94	

Training Tasks -- deploy & non-deploy (Compare A to B)	Statement	Status	N	Mean	Significant Difference
Wartime Construction Management	Q4_28_A	Not Deployed	183	3.86	0.000**
	Q4_28_B		183	3.03	
	Q4_28_A	Deployed	326	4.01	0.000**
	Q4_28_B		326	3.00	
Bare Base Planning, Development, and Layout	Q4_29_A	Not Deployed	184	4.28	0.000**
	Q4_29_B		184	3.51	
	Q4_29_A	Deployed	328	4.41	0.000**
	Q4_29_B		328	3.52	
Rapid Runway Repair (RRR) Overview (<i>i.e.</i> , Minimum Operating Strip (MOS) Selection; Repair Quality Criteria; Emergency Airfield Lighting System (EALS); Mobile Aircraft Arresting System)	Q4_30_A	Not Deployed	185	4.11	0.058
	Q4_30_B		185	3.93	
	Q4_30_A	Deployed	327	3.92	0.869
	Q4_30_B		327	3.91	
Damage Assessment and Response Team (DART) Operations	Q4_31_A	Not Deployed	186	4.09	0.000**
	Q4_31_B		186	3.74	
	Q4_31_A	Deployed	328	4.09	0.000**
	Q4_31_B		328	3.70	
Refrigeration Unit Overview	Q4_32_A	Not Deployed	182	3.32	0.002*
	Q4_32_B		182	3.04	
	Q4_32_A	Deployed	327	3.31	0.001**
	Q4_32_B		327	3.10	
Water Distribution System and Reverse Osmosis Water Purification Unit (ROWPU) Operations	Q4_33_A	Not Deployed	184	4.05	0.000**
	Q4_33_B		184	3.59	
	Q4_33_A	Deployed	328	4.01	0.000**
	Q4_33_B		328	3.48	
POL Operations Overview	Q4_34_A	Not Deployed	184	3.78	0.000**
	Q4_34_B		184	3.22	
	Q4_34_A	Deployed	329	3.77	0.000**
	Q4_34_B		329	3.22	
Electrical Distribution and Generation System Overview	Q4_35_A	Not Deployed	182	4.03	0.000**
	Q4_35_B		182	3.36	
	Q4_35_A	Deployed	328	4.07	0.000**
	Q4_35_B		328	3.44	
Organization and procedures of command centers (<i>i.e.</i> , Wing Operations Center; Survival Recovery Center; Damage Control Center)	Q4_36_A	Not Deployed	182	4.15	0.000**
	Q4_36_B		182	3.56	
	Q4_36_A	Deployed	328	4.36	0.000**
	Q4_36_B		328	3.55	

Training Tasks -- deploy & non-deploy (Compare A to B)	Statement	Status	N	Mean	Significant Difference
Communications among organizations	Q4_37_A	Not Deployed	184	4.22	0.000**
	Q4_37_B		184	3.21	
	Q4_37_A	Deployed	329	4.29	0.000**
	Q4_37_B		329	3.16	
Workforce work/rest cycles	Q4_38_A	Not Deployed	182	3.85	0.000**
	Q4_38_B		182	3.08	
	Q4_38_A	Deployed	328	3.78	0.000**
	Q4_38_B		328	3.19	
Overnight Bivouac	Q4_39_A	Not Deployed	183	3.28	0.447
	Q4_39_B		183	3.19	
	Q4_39_A	Deployed	328	3.17	0.319
	Q4_39_B		328	3.26	
Deployment Procedures (<i>i.e.</i> , Recall Procedures; Personnel Processing; Equipment Marshaling)	Q4_40_A	Not Deployed	182	3.92	0.000**
	Q4_40_B		182	3.40	
	Q4_40_A	Deployed	329	4.10	0.000**
	Q4_40_B		329	3.49	
Nuclear, Biological and Chemical Defense Training (<i>i.e.</i> , Mission Oriented Protective Postures; Alarm Conditions; Detection capabilities; etc)	Q4_41_A	Not Deployed	182	4.38	0.000**
	Q4_41_B		182	3.90	
	Q4_41_A	Deployed	329	4.47	0.000**
	Q4_41_B		329	3.81	
Explosive Ordnance Reconnaissance Training	Q4_42_A	Not Deployed	186	3.91	0.000**
	Q4_42_B		186	3.47	
	Q4_42_A	Deployed	329	3.97	0.000**
	Q4_42_B		329	3.52	
Field Sanitation and Health (<i>i.e.</i> , personal hygiene, control of diseases, water purification, kitchen and mess sanitation)	Q4_43_A	Not Deployed	184	4.09	0.000**
	Q4_43_B		184	3.51	
	Q4_43_A	Deployed	329	4.26	0.000**
	Q4_43_B		329	3.59	
Self-Aid/Buddy Care and CPR Training	Q4_44_A	Not Deployed	184	4.12	0.000**
	Q4_44_B		184	3.59	
	Q4_44_A	Deployed	331	4.31	0.000**
	Q4_44_B		331	3.68	
Vehicle and Equipment Operations	Q4_45_A	Not Deployed	183	3.68	0.000**
	Q4_45_B		183	3.34	
	Q4_45_A	Deployed	329	3.72	0.000**
	Q4_45_B		329	3.43	

*Significant (0.05 level); ** Significant (0.001 level)

Appendix F: Responses to Each Survey Statement

Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable
1	2	3	4	5	6	N/A

Figure F-1: Likert Scale (Used for Silver Flag Training)

NOTE: The following responses are not reverse scored. The responses correspond directly to the Likert scale above.

Table F-1: Silver Flag Training Responses to Individual Statements (Rank)

#	Statement (SF)	2Lt	N	1Lt	N	Capt	N	Major	N	Lt Col	N	Col	N	Overall	Total
1b	Civil Engineer unit's place a high emphasis on completing all Silver Flag pre-requisite planning and training tasks prior to attending training at Silver Flag.	4.158	19	3.892	37	3.703	118	4.203	69	4.475	61	4.875	16	4.066	320
1c	I should be attending Silver Flag more often to hone my contingency skills.	3.571	21	4.108	37	4.110	118	4.333	69	4.355	62	4.214	14	4.174	321
1d	The contingency training conducted at Silver Flag does not apply to the required tasks I will perform during a contingency.	1.600	20	2.162	37	2.568	118	2.457	70	2.033	60	2.200	15	2.319	320
1e	More emphasis should be placed on Silver Flag training.	4.095	21	4.405	37	4.462	117	4.486	72	4.694	62	4.375	16	4.477	325
1f	The contingency training I receive at Silver Flag needs improvement.	2.737	19	3.324	37	3.739	115	3.493	67	3.467	60	3.267	15	3.502	313
1g	The length of contingency training conducted at Silver Flag (1 week) is sufficient to prepare me for my contingency missions.	3.905	21	4.324	37	3.965	115	4.310	71	4.371	62	4.500	16	4.183	322
1h	Overall, training conducted at Silver Flag has better prepared me to perform my contingency duties.	5.158	19	4.811	37	4.564	117	5.029	69	5.246	61	5.250	16	4.893	319
1i	The skills that I am taught at Silver Flag are relevant in meeting my contingency responsibilities.	5.150	20	4.811	37	4.453	117	5.043	69	5.180	61	4.875	16	4.825	320

#	Statement (SF)	2Lt	N	1Lt	N	Capt	N	Major	N	Lt Col	N	Col	N	Overall	Total
1j	The officer training curriculum at Silver Flag is training me on the wrong skills to meet my contingency requirements.	2.150	20	2.486	37	2.871	116	2.443	70	2.410	61	2.563	16	2.584	320
1k	The amount of contingency training that Silver Flag provides is enough to prepare me for my contingency missions.	3.450	20	3.919	37	3.310	116	3.543	70	3.902	61	3.688	16	3.572	320
1l	The contingency training I receive while at Silver Flag is appropriate for what I would do during a contingency.	4.632	19	4.270	37	3.974	116	4.275	69	4.467	60	4.533	15	4.234	316
1m	The contingency training I receive at Silver Flag is very realistic.	4.600	20	4.405	37	4.060	117	4.159	69	4.754	61	4.750	16	4.322	320
1n	Preparing and attending Silver Flag training is not a high priority at base level.	2.950	20	2.757	37	3.593	113	3.379	66	3.017	59	2.688	16	3.251	311
1o	I am satisfied with the quality of contingency training I receive at Silver Flag.	4.947	19	4.514	37	4.250	116	4.609	69	4.839	62	4.875	16	4.545	319
1p	The scenarios used for contingency training at Silver Flag are not very realistic.	2.300	20	2.811	37	3.086	116	2.896	67	2.475	61	2.467	15	2.816	316
1q	Adequate time is made available to complete the Silver Flag pre-requisite training.	4.105	19	3.943	35	3.557	115	3.672	64	3.814	59	3.938	16	3.727	308
1r	Overall, Silver Flag training has not contributed to preparing me for my assigned contingency duties.	1.895	19	2.081	37	2.564	117	2.203	69	1.984	62	1.750	16	2.238	320

Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable
1	2	3	4	5	6	N/A

Figure F-2: Likert Scale (Used for Home Station Training)

NOTE: The following responses are not reverse scored. The responses correspond directly to the Likert scale above.

Table F-2: Home Station Training Responses to Individual Statements (Rank)

#	Statement (HST)	2Lt	N	1Lt	N	Capt	N	Major	N	Lt Col	N	Col	N	Overall	Total
2d	The amount of contingency training that I receive through home station training is enough to prepare me for my contingency missions.	3.113	53	2.891	55	3.163	98	3.926	27	2.909	33	4.000	5	3.159	271
2e	The scenarios used for home station contingency training are not very realistic.	3.784	51	3.667	51	3.316	95	3.593	27	3.606	33	3.800	5	3.550	262
2f	The skills that I am taught at home station are appropriate for meeting my contingency responsibilities.	3.642	53	3.455	55	3.541	98	4.481	27	3.879	33	4.800	5	3.701	271
2g	Contingency training is one of our squadron's highest priorities.	3.453	53	3.400	55	3.371	97	4.000	27	3.938	32	5.000	5	3.554	269
2h	My home station contingency training program is very good.	3.604	53	3.491	55	3.480	98	3.926	27	3.909	33	5.400	5	3.638	271
2i	The amount of time I spend on my normal peacetime mission and tasks does not leave enough time for adequate contingency training.	4.077	52	3.981	53	4.582	98	3.962	26	4.364	33	3.600	5	4.258	267
2j	The home station contingency training I receive is appropriate for what I might need during a contingency deployment.	3.302	53	3.345	55	3.567	97	3.962	26	3.531	32	4.800	5	3.526	268

#	Statement (HST)	2Lt	N	1Lt	N	Capt	N	Major	N	Lt Col	N	Col	N	Overall	Total
2k	Overall, home station contingency training conducted at my current duty station adequately prepares me to perform my contingency duties.	3.396	53	3.182	55	3.408	98	4.077	26	3.576	33	5.000	5	3.474	270
2l	My unit's home station contingency training curriculum is focused on the wrong things to meet my contingency requirements.	3.196	51	3.148	54	3.074	95	2.615	26	3.121	33	1.600	5	3.045	264
2m	The amount of contingency training that I receive at my current duty location is insufficient to meet my contingency responsibilities.	4.000	51	3.759	54	3.694	98	3.231	26	3.485	33	2.400	5	3.670	267
2n	The home station contingency training I receive is very realistic.	2.920	50	3.182	55	3.319	94	3.741	27	3.636	33	3.800	5	3.307	264
2o	Compared to other CE requirements at my current base, contingency training receives lower priority.	4.083	48	3.982	55	4.163	98	3.923	26	3.970	33	2.600	5	4.034	265
2p	The home station contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.	3.431	51	3.370	54	3.229	96	3.037	27	2.750	32	2.600	5	3.208	265
2q	I am satisfied with the quality of home station contingency training I receive.	3.404	52	3.164	55	3.245	98	4.115	26	3.606	33	5.000	5	3.420	269
2r	The home station contingency training I receive needs improvement.	4.519	52	4.500	54	4.429	98	3.885	26	4.344	32	3.200	5	4.375	267
2s	I should be receiving more training at my home station to hone my contingency skills.	4.385	52	4.309	55	4.429	98	4.115	26	3.970	33	3.000	5	4.283	269
2t	Adequate time is made available at my current duty station to complete my contingency training requirements.	3.627	51	3.481	54	3.131	99	3.538	26	3.030	33	4.400	5	3.347	268
2u	Overall, home station contingency training does not adequately prepare me for my assigned contingency duties.	3.750	52	3.849	53	3.776	98	2.760	25	3.188	32	2.400	5	3.592	265

Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable
1	2	3	4	5	6	N/A

Figure F-3: Likert Scale (Used for Civil Engineer and Services School)

NOTE: The following responses are not reverse scored. The responses correspond directly to the Likert scale above.

Table F-3: CESS Responses to Individual Statements (Rank)

#	Statement (CESS)	2Lt	N	1Lt	N	Capt	N	Major	N	Lt Col	N	Col	N	Overall	Total
3b	The number of contingency training courses that CESS provides is enough to prepare me for my contingency missions.	3.661	59	3.704	71	3.536	181	3.916	83	3.640	50	4.700	10	3.685	454
3c	Adequate time is/was made available to prepare me to attend CESS contingency classes.	4.328	61	4.353	68	4.149	181	4.654	81	4.348	46	4.625	8	4.326	445
3d	CESS contingency courses offered (<i>i.e.</i> , MGMT 101 and/or MGMT 585) are sufficient to prepare me for my contingency missions.	3.300	60	3.662	71	3.396	182	3.585	82	3.458	48	4.400	10	3.488	453
3e	CESS should offer an additional contingency course to better prepare me to meet my contingency missions.	4.610	59	4.437	71	4.171	181	3.902	82	4.042	48	3.800	10	4.200	451
3f	The contingency training I receive at CESS needs improvement.	3.710	62	3.389	72	3.682	179	3.439	82	3.800	45	3.000	9	3.592	449
3g	Overall, CESS training does not adequately prepare me for my assigned contingency duties.	3.500	60	3.188	69	3.363	179	3.073	82	2.915	47	2.000	10	3.224	447
3h	The scenarios used for contingency training at CESS are not very realistic.	2.983	60	3.014	70	3.079	178	2.873	79	2.773	44	2.222	9	2.970	440
3i	My unit places a high emphasis on sending CE officers to CESS contingency courses.	4.050	60	3.803	71	3.983	177	4.413	80	4.674	46	5.000	9	4.133	443

#	Statement (CESS)	2Lt	N	1Lt	N	Capt	N	Major	N	Lt Col	N	Col	N	Overall	Total
3j	The CESS contingency training I receive is appropriate for what I might need during a contingency.	3.914	58	4.028	72	3.973	182	4.349	83	4.217	46	4.700	10	4.084	451
3k	CESS contingency course lesson plans are focused on the wrong skills to meet my contingency requirements.	3.053	57	2.943	70	2.933	179	2.683	82	2.674	46	2.000	10	2.856	444
3l	The CESS courses are training the correct material to meet my contingency requirements.	4.052	58	4.087	69	4.034	179	4.341	82	4.326	46	4.800	10	4.149	444
3m	Attending CESS contingency courses is/was a high priority at my base.	4.052	58	3.845	71	3.977	177	4.346	81	4.766	47	4.889	9	4.135	443
3n	There should be more contingency training classes taught at CESS to help hone my contingency skills.	4.390	59	4.472	72	4.137	182	3.866	82	4.298	47	3.800	10	4.184	452
3o	The CESS contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.	3.107	56	3.029	68	3.011	181	2.795	83	2.872	47	2.000	10	2.948	445
3p	I am satisfied with the quality of contingency training I receive at CESS.	4.017	60	4.113	71	4.055	183	4.446	83	4.413	46	5.100	10	4.190	453
3q	There is too big of time span between MGMT 101 and MGMT 585 (approximately 7 years).	4.792	48	4.969	65	4.803	178	4.146	82	4.229	48	3.500	10	4.608	431
3r	Overall, training conducted at CESS adequately prepares me to perform my contingency duties.	3.707	58	3.928	69	3.812	181	4.037	82	4.152	46	4.700	10	3.913	446
3s	The contingency training I receive at CESS is very realistic.	3.845	58	3.886	70	3.811	180	4.213	80	4.298	47	4.700	10	3.971	445

	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable
1		2	3	4	5	6	N/A

Figure F-4: Likert Scale (SF - Repeated)

NOTE: The following responses are not reverse scored. The responses correspond directly to the Likert scale above.

Table F-4: Silver Flag Responses to Individual Statements (MAJCOM)

#	Statement (Silver Flag)	ACC	N	AMC	N	AFMC	N	AFSPC	N	PACAF	N	USAFE	N	AETC	N	BLANK/ OTHER	N	Total	N
1b	Civil Engineer unit's place a high emphasis on completing all Silver Flag pre-requisite planning and training tasks prior to attending training at Silver Flag.	4.24	71	3.63	35	4.58	31	4.00	17	3.76	49	3.97	29	4.28	47	3.98	41	4.07	320
1c	I should be attending Silver Flag more often to hone my contingency skills.	4.10	72	3.53	36	3.93	30	4.69	16	4.13	48	3.90	29	4.79	47	4.40	43	4.17	321
1d	The contingency training conducted at Silver Flag does not apply to the required tasks I will perform during a contingency.	2.15	72	2.55	33	2.32	31	2.06	16	2.41	49	2.63	30	2.15	48	2.39	41	2.32	320
1e	More emphasis should be placed on Silver Flag training.	4.46	72	4.22	36	4.48	31	4.65	17	4.45	49	4.17	30	4.94	47	4.40	43	4.48	325
1f	The contingency training I receive at Silver Flag needs improvement.	3.23	70	3.74	35	3.41	29	3.69	16	3.96	48	3.68	28	3.32	47	3.30	40	3.50	313
1g	The length of contingency training conducted at Silver Flag (1 week) is sufficient to prepare me for my contingency missions.	4.15	73	4.06	35	4.20	30	4.41	17	4.14	49	4.34	29	4.09	47	4.29	42	4.18	322
1h	Overall, training conducted at Silver Flag has better prepared me to perform my contingency duties.	4.89	72	4.63	35	4.90	30	5.00	16	4.65	49	4.76	29	5.21	47	5.10	41	4.89	319

1i	The skills that I am taught at Silver Flag are relevant in meeting my contingency responsibilities.	4.82	73	4.60	35	4.90	30	5.06	16	4.69	49	4.52	29	4.94	47	5.12	41	4.83	320
1j	The officer training curriculum at Silver Flag is training me on the wrong skills to meet my contingency requirements.	2.55	73	2.74	35	2.70	30	2.40	15	2.78	49	2.76	29	2.27	48	2.51	41	2.58	320
1k	The amount of contingency training that Silver Flag provides is enough to prepare me for my contingency missions.	3.60	72	3.40	35	3.70	30	3.56	16	3.53	49	3.52	29	3.60	48	3.63	41	3.57	320
1l	The contingency training I receive while at Silver Flag is appropriate for what I would do during a contingency.	4.30	70	3.97	34	4.23	30	4.25	16	4.04	49	4.00	29	4.63	48	4.28	40	4.23	316
1m	The contingency training I receive at Silver Flag is very realistic.	4.42	73	4.26	35	4.40	30	4.13	16	3.82	49	4.31	29	4.71	48	4.38	40	4.32	320
1n	Preparing and attending Silver Flag training is not a high priority at base level.	3.04	70	3.09	34	2.83	30	3.71	17	3.42	48	3.11	28	3.45	44	3.55	40	3.25	311
1o	I am satisfied with the quality of contingency training I receive at Silver Flag.	4.72	72	4.23	35	4.57	30	4.38	16	4.22	49	4.23	30	4.92	48	4.74	39	4.55	319
1p	The scenarios used for contingency training at Silver Flag are not very realistic.	2.76	71	2.77	35	2.55	29	2.75	16	3.18	49	2.90	29	2.51	47	3.03	40	2.82	316
1q	Adequate time is made available to complete the Silver Flag pre-requisite training.	3.79	67	3.64	33	4.19	31	4.12	17	3.19	48	3.81	26	3.89	46	3.58	40	3.73	308
1r	Overall, Silver Flag training has not contributed to preparing me for my assigned contingency duties.	2.32	71	2.43	35	2.13	30	2.38	16	2.35	49	2.23	30	2.02	48	2.07	41	2.24	320

	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable
1		2	3	4	5	6	N/A

Figure F-5: Likert Scale (HST - Repeated)

NOTE: The following responses are not reverse scored. The responses correspond directly to the Likert scale above.

Table F-5: HST Responses to Individual Statements (MAJCOM)

#	Statement (HST)	ACC	N	AMC	N	AFMC	N	AFSPC	N	PACAF	N	USAFE	N	AETC	N	BLANK/ OTHER	N	Total
2d	The amount of contingency training that I receive through home station training is enough to prepare me for my contingency missions.	3.35	86	2.55	33	3.70	33	3.38	33	3.17	46	2.85	27	2.41	17	3.38	13	3.16
2e	The scenarios used for home station contingency training are not very realistic.	3.74	84	3.61	31	3.66	32	4.00	15	3.27	45	3.15	26	3.50	16	3.23	13	3.55
2f	The skills that I am taught at home station are appropriate for meeting my contingency responsibilities.	3.91	86	3.27	33	4.03	33	3.69	16	3.67	46	3.19	27	3.29	17	4.31	13	3.70
2g	Contingency training is one of our squadron's highest priorities.	3.95	84	3.03	33	3.94	33	3.06	16	3.50	46	3.37	27	2.88	17	3.38	13	3.55
2h	My home station contingency training program is very good.	3.70	86	3.27	33	4.24	33	3.31	16	3.83	46	3.41	27	2.94	17	3.77	13	3.64
2i	The amount of time I spend on my normal peacetime mission and tasks does not leave enough time for adequate contingency training.	3.92	84	4.88	33	3.84	32	4.13	16	4.57	46	4.11	27	4.53	15	4.93	14	4.26
2j	The home station contingency training I receive is appropriate for what I might need during a contingency deployment.	3.79	85	3.45	33	3.85	33	3.31	16	3.47	45	3.11	27	2.76	17	3.50	12	3.53

#	Statement (HST)	ACC	N	AMC	N	AFMC	N	AFSPC	N	PACAF	N	USAFE	N	AETC	N	BLANK/ OTHER	N	Total	N
2k	Overall, home station contingency training conducted at my current duty station adequately prepares me to perform my contingency duties.	3.67	85	3.21	33	3.85	33	3.25	16	3.54	46	3.00	27	2.82	17	3.77	13	3.47	270
2l	My unit's home station contingency training curriculum is focused on the wrong things to meet my contingency requirements.	3.13	84	3.33	33	2.78	32	3.44	16	2.73	45	3.12	26	3.13	15	2.77	13	3.05	264
2m	The amount of contingency training that I receive at my current duty location is insufficient to meet my contingency responsibilities.	3.55	84	4.06	33	3.06	33	4.06	16	3.54	46	4.15	27	4.00	15	3.62	13	3.67	267
2n	The home station contingency training I receive is very realistic.	3.29	82	2.97	32	3.66	32	3.44	16	3.73	45	3.07	27	2.47	17	3.31	13	3.31	264
2o	Compared to other CE requirements at my current base, contingency training receives lower priority.	3.93	82	4.61	33	3.61	33	4.47	15	3.89	45	4.07	27	4.18	17	4.08	13	4.03	265
2p	The home station contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.	3.05	84	3.28	32	3.21	33	3.75	16	3.09	44	3.15	27	3.65	17	3.33	12	3.21	265
2q	I am satisfied with the quality of home station contingency training I receive.	3.62	84	3.03	33	3.79	33	3.31	16	3.43	46	3.15	26	3.00	17	3.36	14	3.42	269
2r	The home station contingency training I receive needs improvement.	4.30	84	4.67	33	4.09	33	4.40	15	4.41	46	4.54	26	4.41	17	4.31	13	4.37	267
2s	I should be receiving more training at my home station to hone my contingency skills.	4.18	84	4.64	33	3.73	33	4.38	16	4.35	46	4.38	26	4.41	17	4.71	14	4.28	269
2t	Adequate time is made available at my current duty station to complete my contingency training requirements.	3.38	84	3.12	33	3.97	33	3.31	16	3.37	46	2.93	27	3.13	15	3.21	14	3.35	268
2u	Overall, home station contingency training does not adequately prepare me for my assigned contingency duties.	3.43	84	4.00	32	3.13	31	3.63	16	3.54	46	3.96	27	3.69	16	4.00	13	3.59	265

	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	Not Applicable
1		2	3	4	5	6	N/A

Figure F-6: Likert Scale (CESS - Repeated)

NOTE: The following responses are not reverse scored. The responses correspond directly to the Likert scale above.

Table F-6: CESS Responses to Individual Statements (MAJCOM)

#	Statement (CESS)	ACC	N	AMC	N	AFMC	N	AFSPC	N	PACAF	N	USAFE	N	AETC	N	BLANK/OTHER	N	Total
3b	The number of contingency training courses that CESS provides is enough to prepare me for my contingency missions.	3.50	107	3.83	40	3.98	50	3.54	24	3.57	65	3.09	32	3.94	77	3.86	59	3.69
3c	Adequate time is/was made available to prepare me to attend CESS contingency classes.	4.16	107	4.29	38	4.74	50	4.52	25	4.20	61	3.72	32	4.54	74	4.41	58	4.33
3d	CESS contingency courses offered (i.e., MGMT 101 and/or MGMT 585) are sufficient to prepare me for my contingency missions.	3.36	107	3.38	40	3.88	48	3.48	25	3.31	64	3.13	32	3.65	79	3.66	58	3.49
3e	CESS should offer an additional contingency course to better prepare me to meet my contingency missions.	4.25	105	4.10	40	4.04	49	4.60	25	4.36	64	4.06	32	4.21	78	4.03	58	4.20
3f	The contingency training I receive at CESS needs improvement.	3.70	105	3.45	40	3.49	51	3.64	25	3.75	61	3.45	31	3.51	78	3.57	58	3.59
3g	Overall, CESS training does not adequately prepare me for my assigned contingency duties.	3.51	105	3.05	40	2.84	50	3.08	24	3.38	64	3.30	33	3.15	75	3.09	56	3.22

#	Statement (CESS)	ACC	N	AMC	N	AFMC	N	AFSPC	N	PACAF	N	USAFE	N	AETC	N	BLANK/ OTHER	Total	N	
3h	The scenarios used for contingency training at CESS are not very realistic.	3.06	102	3.03	37	2.67	49	3.09	23	3.14	63	3.09	33	2.80	76	2.95	57	2.97	440
3i	My unit places a high emphasis on sending CE officers to CESS contingency courses.	4.21	102	4.21	38	4.56	50	4.52	25	3.89	62	3.85	33	4.01	75	4.00	58	4.13	443
3j	The CESS contingency training I receive is appropriate for what I might need during a contingency.	3.93	104	4.18	40	4.45	51	4.00	25	3.78	64	4.09	33	4.25	77	4.12	57	4.08	451
3k	CESS contingency course lesson plans are focused on the wrong skills to meet my contingency requirements.	3.13	102	2.68	38	2.62	50	2.96	25	2.87	63	3.03	33	2.64	75	2.81	58	2.86	444
3l	The CESS courses are training the correct material to meet my contingency requirements.	4.08	105	4.18	39	4.34	50	4.04	25	4.02	61	4.06	33	4.30	74	4.14	57	4.15	444
3m	Attending CESS contingency courses is/was a high priority at my base.	4.15	105	4.26	38	4.52	50	4.04	25	3.87	63	4.06	33	4.16	74	4.02	55	4.14	443
3n	There should be more contingency training classes taught at CESS to help hone my contingency skills.	4.28	103	4.05	40	4.04	51	4.44	25	4.30	64	4.09	32	4.31	78	3.88	59	4.18	452
3o	The CESS contingency training I receive does not apply to tasks I'll be doing during a contingency deployment.	3.06	105	2.88	40	2.63	49	3.08	24	2.95	63	2.94	33	3.04	73	2.90	58	2.95	445
3p	I am satisfied with the quality of contingency training I receive at CESS.	4.09	105	4.25	40	4.47	51	4.00	25	4.08	64	4.06	33	4.35	77	4.16	58	4.19	453
3q	There is too big of time span between MGMT 101 and MGMT 585 (approximately 7 years).	4.63	99	4.42	38	4.52	48	5.20	25	4.78	60	4.74	34	4.55	69	4.33	58	4.61	431
3r	Overall, training conducted at CESS adequately prepares me to perform my contingency duties.	3.82	105	3.90	40	4.27	49	3.76	25	3.89	64	3.55	33	4.12	73	3.82	57	3.91	446
3s	The contingency training I receive at CESS is very realistic.	3.87	102	3.88	40	4.27	49	4.09	23	3.88	64	3.88	33	4.15	75	3.85	59	3.97	445

Appendix G: Additional Comments

Table G-1: Additional Comments by Rank

Second Lieutenant Additional Comments
At this point in my career, the most realistic and extensive contingency training that I have been exposed to was when I attended MGT101(in particular when we "deployed" down to the Silver Flag site). The only time I have even seen most of the contingency equipment(harvest eagle/falcon,etc..) was during the OFE phase of MGT101. The MGT101 course was excellent in teaching new Officers how we(CE) operate during contingencies, the main problem is after we leave MGT101-We don't keep our contingency skills "sharp". At our squadron, prime beef training takes a back seat to just about everything else.
I am a new officer that came on active duty 25 Sept. Over all I am pleased with the training but would like to add that I have nothing to compare it with.
I am at a base with no connection to an AEF, so we are primarily a non-deployable unit. We occasionally fill onesies or twosies as part of a different team. As such, contingency operations or training are not stressed very much. We do accomplish our annual PRIMEBEEF refresher, which pretty much is video tape snoozefest. I am sure when I am eventually assigned to a base with a mobility mission, there will be better training available and stressed.
I am at a nondeployable unit with no PRIME BEEF, no EOD, and not much CE training. I'm sure my views would be much different if I wasn't in AETC with no wartime mission.
I am fairly new to the Air Force and CE as a whole. But I am confident in Shaw's Readiness Flight and the training I receive from them. They are working hard to get us prepared for a contingency. I have been here 11 months and have participated in 3 ORE's and 2 bivouacs. The monthly training is organized and thorough. I may not have the field experience, but when I deploy, I know I am not flying blind.
I am relatively new to the career field and haven't had much experience or training.
I did not complete some of the first couple sections because I felt like you were wasting my time asking the same questions in slightly different ways. I don't understand you're point in doing so, but people will not want to complete surveys like this if they feel that their time is being wasted.
I do not think this will help because I am so new. I didn't really know what the stuff was that you were asking me about. Sorry.
I feel the once over we get in MGMT 101 is not enough. If I ever had to layout base or design the electrical I would be just lost! More training is required!
I have never been deployed, work in a contracted out squadron, and we only do CAT I training.
I have only been in the real AF for three months so my info is probably not really relevant to this survey.
I have only been working active duty since August 7, 2000. I am attending Mgt 101 in March/April time frame.

I just returned from the Aerospace Basic Course at Maxwell AFB, AL. It is a very good course that "picks up the slack" from what CE training lacks. In particular, the areas of Law of Armed Conflict, Joint OPS, Command Centers, and Air Force Doctrine.
It seems that the biggest barrier to good training is lack of funds and equipment. At my base, we don't have the proper equipment to do many of the things that we need to do to implement a strong home-base contingency training program.
Many of the training programs exist, but are inadequate. For example...self Aid/Buddy Care is taught by watching a video, and nothing else. I know close to nothing in regards to SABC.
Many questions seemed to repeat in the first section; just being re-worded. If this survey is concerned mostly with Base-Level CE, that should be spelled out before answering the questions. My REDHORSE contingency training is excellent because that is just about all we do. But it seemed that a lot of the surbey wasn't applicable to my situation.
Maybe I shouldn't have filled it out on a Firday afternoon but questions started getting repetetive. It was OK though. Good luck.
MGT 101 gave me a general overview of what CE is responsible for and how we get it done. It did not teach me what I would be doing as a Lt in the squadron. When I went to silver flag (separate from MGT 101) I was busy during the base layout stages, but when we 'deployed' I had nothing to do and no responsibilities.
My squadron has been very helpful in preparing me for a contingency operation, both through offical training and through informal OJT. While I look forward to recieving more formal training when I attend MGT 101, I feel confident that I will be able to function well in a contingency operation based on the help and guidance I have recieved from my squadron
Need more training in planning beddown (from deploying to arriving) with actual field simulation. Initial Off training only goes thru paper planning and examples of work done. It would be excellent if we implemented our plans
Need to emphasize force protection for our CE troops. We need more money to keep Officers qualified on weapons to be ready for contingencies.
Note about small arms training: There is an extremely small amount of training done regarding small arms firing--we're expected to qualify after having learned about the gun in only 2 hours or so. We need to have the ability to practice firing during the down months before needing to qualify.
Overall MGT101 gave great contingency training. I think the training at the silver flag site should have been more than a week.
Silver Flag was a great training site. The instructors were excellent. My biggest complaint about CE in the AF is that I am a young 2Lt who is ready to go serve my country ANYWHERE, but because I'm at an AETC base with no UTC I'm not getting any opportunity to do that. I wish I could still volunteer for taskings somehow. That's why I joined the Air Force!
The fact that AETC lost their Prime Beef mission is a huge lose to the contingency preparedness of myself and most personnel in the command. With no mission there is no reason for contingency training...there is something really wrong with that.

Work at Tyndall AFB; Operations flight is contracted; no PRIME BEEF; No officer UTC's; Limited Senior NCO exposure; Recently attended MGT 101, seems like I'm in a different career field; Desk Engineering Squadron
you asked too many questions that were exactly the same as other questions already asked!
Your survey doesn't take into account whether or not a person is at an A-76 base. Once the base was announced, all Prime Beef assets left, as did the training. I think that that is a critical mistake and the result is a significant percentage of CE troops that have no contingency training what-so-ever and don't even know what Prime BEEF is, much less what it stands for. We do not conduct any type of Prime BEEF training, the only training we receive is the NBC, self-aid buddy, LOAC, and firing range.
First Lieutenant Additional Comments
A lot of answers to these questions are based on what I perceive that I will need for a contingency since I haven't been on one yet
Columbus AFB has undergone an A-76 and currently has no mobility commitment for its officers. Training consists of videos and no small arms qualification.
Currently we receive excessive training on things that are easy to train and limited training on important aspects. Videos should not be considered training! Try reading a book on writing an effective and unbiased survey.
I am probably not the best candidate for this survey. Previously I worked at base level CE but we were involved in an A-76 study and our contingency training was basically forgotten. We did have a last minute- 3 day bivouac but with our lack of resources we were unable to cover much training. Currently I am working in an acquisition environment so I won't receive further contingency training until I get back to base level CE.
I don't do any actual engineering (design or mgt) at the base. When I deployed, I found that I was very little help when it came to contracting issues, back of the napkin designs, etc. Either make us good engineers at the base or make us proficient contingency engineers...this half and half stuff just doesn't cut it.
I just PCSed from Osan AB, Korea so my answers were based off of that station. I was very impressed with the way Readiness Flight organized and held monthly Readiness Days for the 51st CES. I learned a lot while there as did the troops. This was only enhanced when we had our quarterly exercises. Having never been stationed at a CONUS Base level CE squadron, I am not aware how well training is conducting there. But, Korea did an outstanding job for the threat at hand. I would feel very confident if we had to go to War.
I think the training may be adequate, however, since I've never been deployed, I'm not sure. I think we get good info, we just don't practice it enough to remember it all.

I'm deploying next week and I do not feel prepared. I am prepared with chem/NBC training, but not on contracting with host nation and working through a construction project, which is what I will be doing 99% of my time. We are often deployed into jobs that we do not do at our home base, and are learning something brand new in the contingency environment - training in advance would be better, (even if it is just reading a manual familiarizing the officer with their responsibilities). There is training for contingencies after 7-8 years, but this is MUCH TOO LATE when 2nd and 1st Lts are being put in Capt positions in deployments (which they can do, but need training!).
My squadron does not have an in-place UTC, which is why I never receive any in-house training or go on deployments. There needs to be additional training for "new" CE personnel who are assigned to non-mobility squadrons for their first base.
Need more emphasis on short duration training deployments, such as the Air Mobility Warfare Center's Pheonix Readiness, the Joint Task Force New Horizon projects, or even wing exercise deployments that break out of the same old cold war exercises. These type of deployment exercises, particularly the New Horizon projects, would provide essentially real world experiences. The New horizon projects are SOUTHCOM deployments to countries such as belize, honduras or ecuador, to build schools, clinics, etc. The call for 40-50 person CE teams to deploy for 30-60 days, and complete an entire project. I pitched this idea to my previos commander, as well as Pheonix Readiness, but no one wants to volentarily send teams out to these deployments and let the home station projects (like base beautification) suffer. Also, a contingecy course inbetween 101 and 585 would be helpful.
Need more emphasis on work/rest cycles. Exercises generally too compressed to focus on their need... critical in real ops. Need to increase availability of equipment at bases for training (ROWPU, MAAS, EALS, etc)
Question 2c is not a very good question for Officers. If the desert (PSAB) is still considered a contingency then my day-to-day work was excatly what I did at PSAB, except at PSAb there was actually work to do. I would much rather spend my CE career in the desrt where there is work to be done, there isn't a lot of BS that you have to deal with, i.e. additional duties, base appearance competitions, etc. The extent of my contingency training is 1 time at Silver flag and 1 time at MGT 101. There was no emphasise on contingency contracting or contingency construction management/project management.
Thanks so much for asking these questions. I've been very appalled at the lack of training provided to me as a CE Officer. Although I learn plenty on the job and am willing to face challenges, it's discouraging to know that I could have been trained or indoctrinated better, but wasn't. I feel that I had better preparation to go to Officer Field Training in ROTC, than to do my realworld duties. I encourage and applaude this effort to improve CE Officer Training. Please contact me if you want additional input.

The best contingency training that I have ever had is at the Air Mobility Warfare Center at Ft Dix, New Jersey. The training mission is slightly different than Silver Flag and the training is farsuperior. The Air Force should look at making contingency training an annual requirement. Attend Silver Flag one year and AMWC the next. The amount of equipment available for base level training is not even close to being adequate for preparing personnel for contingency operations. The Air Force needs to put much more emphasis on the wartime mission, give us more time than 1 Prime BEEF day a month. Let the military concentrate more on the wartime mission, after all that's why we have all these civilians.

The quality of CAT 2 training and OREs are adequate to prepare for contingency operations. It seems there are never enough Silver Flag slots to train everyone and the dates are spread too far apart to keep everyone up on CAT 3. Readiness is a subject that is only paid attention to if an ORI is on the horizon. Otherwise, it is given lip service until a "real world" item pops up like renovating the Wing CC office. Readiness never gets a Wing CC promoted to General, it can only get him fired if he fails an ORI and thus it is seldom a high priority. Cat 1 training is often out of date and not realistic. It is a waste of time to spend X number of hours watching videos since the info is rarely retained.

There really haven't been any opportunities to deploy. Maybe this is linked to being in AETC. I have been working outside CE for the last year.

These results would be good information for Readiness Flights to receive to improve training programs at base level for CAT I, II and III training.

These survey questions were written in a very biased manner. The survey should be used to test a hypothesis, not steer the reader right to it.
Management 101 was a good class. I think it handled contingency training rather well, but it's only a start. I haven't even heard of that other class. I've never talked to anyone who had a rigorous base training program. I work 80%+ of my time trying to program and fund projects. The leftover I spend in exercises. I didn't factor in exercises as part of training for my answers to these questions. I got all my contingency training when I got deployed and the AF is great at making sure that happens all the time to everyone. I bet Silver Flag is great training, but it touches so few people. If you're at a base that goes to Silver Flag, one CGO leads the team there. This means that the other 8 or 9 CGOs don't get any training. I'm sure many CGOs go their whole career and never see Silver Flag.

We don't have PRIME BEEF at my base - we have switched over to AEF.

Captain Additional Comments

1. I counted UFL (C&C exercise) for e. Also, I am assigned to a base hit by a hurricane so I didn't have to deploy but was involved in that operation.
2. For a lot of the does this training prepare you for a contingency operation, I really couldn't tell you since I haven't been invlved in many such operations and the ones I was involved with were minor/contrived.

A very important training requirement that is always overlooked is the host nation support. We always assume we have it, but never practice dealing with the locals (people, religion, construction standards, material availability, etc) The Army and USMC also train on "Civilians on the Battlefield". A novel concept (since there will always be some, especially in a MOOTW) that we have completely overlooked. Dealing with hungry, homeless/displaced persons can become a major issue of commanders, and engineers. Food for thought.

Adequate emphasis is not being placed on home-station training. Two days a month is not appropriate for the mission we are expected to tackle if we deploy. Officers do not seem to be getting the idea that training is our job, the base-level work is a bonus for the installation. Not too many contingency ops care about what color the general's house is, or if the grass is a quarter inch too high. Focus on training, focus on the fight!

All our current contingency training is for going to a bare base, setting up, fighting and recovering from attacks. The only time I ever use the contingency training is during Silver Flag or PB days, while my "real world contingency deployments" have been to "established" locations in Saudi where it's basically been longer, fastpaced 6-day work weeks in a foreign country at a higher threat level for 3-4 months. Training is good for when we really need it, but has had minimal impact on what I have actually done while deployed.

Although I have never been deployed for a contingency, I have been TDY quite a bit. Between Home station training, annual bivouac, and Readiness Challenge, we have spent a lot of time sleeping in tents. I would say that of all of my Prime BEEF training, nothing comes close to the quality of training that we received by competing in Readiness Challenge. Several of our personnel deployed to Kosovo and SWA after RC and said that the RC training superbly prepared them for their contingency taskings. Much of the training that we do has one or two year refresher requirements. This sort of frequency will never keep the younger troops proficient. The seasoned CE troops who have been doing it for years may have had enough exposure to know the tasks well. The only way to stay proficient is to do it frequently. Silver Flag is not the only way to get good contingency training. Deploying to, training, and exercising at RHSTS is a great way for units to get contingency skills honed. Boiled down, if the AF really wants well trained personnel, we have to exercise our real wartime tasks frequently with very little simulation.

As a one year capt, I was pegged for the staff CE position for JTF SHINING HOPE (a Maj/Lt Col job). I have tons of input to give you based on my experiences in Albania.

CESS need to teach two types of “Contingency Training” Type 1 – Bare base set up and wartime contingency operations. The CE community does an extremely good job at doing this thought its MGT 101, MGT 585, and Silver Flag. I would suggest little or no changes here. Type 2 – The day-to-day contingency operations. The CE community wrongly assumes that if an engineer graduates from an accredited four year engineering school, then that person knows everything he or she needs to know to be an engineer. Nothing can be further from the truth. In the world of steady state operations (SWA, SOUTHAF, Balkans, we are deploying Lt and Jr Captains who have never exercised their engineering skills because all they do in “manage” AE Contracts and never exercise their engineering skills. The only way engineers can maintain these skills is to either deploy them or send them to school. At the AEF Center, I am doing my best to deploy them. But “trial-by-fire” is not the way to go. A better solution would be to bring back the Mechanical and Electrical Design Classes that you used offer. (Sorry I don’t remember the names.). I have heard a number of horror stories screwed up designs in SWA because the engineers are doing the best they can, but they don’t have the experience. I know money is tight, but somehow this issue need so be addressed.
CFETP???, I helped write it.
Contingency training needs to move away from the RRR/MOS plotting/CCD emphasis (Cold War) and concentrate on low-level conflict/peacekeeping/natural disaster/humanitarian efforts. It is more important these days to know contingency contracting, working with other nations, working with other DOD organizations, and working with other agencies within USAF or a Wing.
Crap, I think I voted for Pat Buchanan!
Currently assigned to Kunsan AB so I consider the whole 355 days "deployed." That is also why the home station training is realistic...this is one of the few sites in the AF where we'll do our mission at our home station--thus added realism.
Currently assigned to the MAJCOM so I don't see any Prime Beef training/deployments/ etc. Wish we did, would help keep those skills fresh. I'm not sure it came across in my answers, but I think we should train more for the low-intensity conflict/humanitarian type of operation and less time on full-scale war. Being able to properly assess the beddown location is training that is not offered anywhere but is vital to everyone. Just my thoughts.
Day to Day: The things that makes or breaks a BCE are SORTS (how good the squadron looks) and the peacetime job (construction and maintenance of buildings). Until that changes, you are facing a huge uphill climb. I wish you luck, because increased emphasis is long overdue.

Due to my area of specialty and experience in the Air Force I have followed a non-traditional career path. My professional experience has been concentrated in the environmental field -- base level (5 yrs, most of those years at a closure base). I have earned a Ph.D. (through the CI program), which required a follow-on instructional assignment teaching environmental management, this accounts for my other four years of my nine year tour. Because of this my experience with deployments is extremely limited, therefore the value of my survey to you may not be all that great. I just thought, this background information may be of use.

From my experience, our contingency environments are nothing more than an AF Base off US soil. I was at Al Jaber Air Base in Kuwait. There I was doing all the things I was doing home station (Working project through the Corps of Engineer, determining what new project were needed, small scale design and project inspections), only difference was I was in Kuwait. Yes we moved an occasional tent here or there but most people were lucky enough to live in a hard (trailer) type facility. Were we starting to do a lot of facility maintenance and we use local contractors to build things for us (our new in ground swimming Pool) vs building them ourselves.

Given the state of affairs and manning, 585 should be opened up to all Captains. This is the level of leadership that will be leading our troops in a contingency environment and they should qualify for this class.

Great survey. Quick and easy. Covers very relevant issues to today's Air Force.

Great survey. Unfortunately, I am possibly the least war-fightingest CE officer in the AF. I have been at an AFMC base (no UTC), AFIT, and now an AETC base but am assigned to a non-CE unit.

Hope this helps you Rusty. If not, feel free to "change" my answers. :)

I am currently assigned to an overseas remote with no readiness tasking, thus my responses to homestation training may seem somewhat skewed. We do only classroom training here. This is unlike most other bases, however I think there is more we could do; both in the context of what our "deployed in place" mission would be and what we will all eventually return to in the Expeditionary Air Force.

I currently work at Fairchild AFB under AETC. I work at the survival school. I am working outside of my career field. My flight consists of a transportation section, supply section and 7 CE personnel that maintain roads in the Colville National Forest. I am not on readiness status nor have I attended any readiness training since I arrived here 2.5 years ago.

I don't know if I've read the CFETP for CE officers or not -- is this the several-volume set you get at 101? If so, I've read parts of it.

My deployment was to Ali Al Salem in 1998/99 when we were trying to construct permanent facilities and move out of tents (I believe they are still living in tents). We had to expand the existing tent city but did not have to start from scratch like CTS teaches. Nor did we have too much to do with the air field. CTS is artificial in that the CE officers have to figure out the whole base when in reality, there will be many other agencies giving CE their requirements. Very likely CE will not be driving the train as they are in CTS. Training in contracting would have been extremely beneficial during my deployment. Training on how to maintain and upgrade an existing tent city and transform it into permanent or semi-permanent facilities would be beneficial for such locations as Ali Al Salem. RE: Section 4, question 16. The biggest problem with deployments (when I went 2 years ago and still now when I'm sending my troops out) is the transportation to and from the deployed location for support personnel. Even after all these years of going to the desert, transportation still can't get their act together and provide reliable, scheduled airlift -- at least not for CE troops. We get jerked around going to the desert and coming back. It makes the Air Force look as though it doesn't care about support personnel as much as it cares about aircrew and maintainers. At a contingency location such as Ali Al Salem, CE and Services are number one. Without us there is no place to sleep, eat, wash, work; there is no electricity, no water, no sewer, no air conditioning, no hot meals. A successful mission is more than flying planes, you have to take care of the people and that is what CE and Services does. We play a vital role in the Air Force's mission and it should be acknowledged by at least providing reliable transportation. RE: Section 4, question 26. It was only with great effort and interest at the highest level that I could get additional Harvest Falcon equipment and replacement parts. It should not be that way for the troops sleeping, eating, working, and using the bathroom in tents. The staff personnel back home didn't seem to think we needed what we were asking for (how they could determine that being on the other side of the world, I don't know). RE: Section 4, question 42. Need new videos. We've been watching these for at least the past 10 years.

I have been in the career field seven years, which puts me at the awkward point of not having formal training for six years. My current base stopped doing Prime BEEF training. Many changes have taken place in the last few years, such as the AEF concept, environmental wartime tasks, a shift from using harvest falcon assets to using existing buildings, and a shift from beddown to sustainment. I strongly feel a mid level course (5 year point?) is needed to stay current on changes. I participated in a tiger team in 1999 to identify the environmental wartime tasks for officers. I have been the environmental flight chief for two years, and I am not qualified to be the deployed environmental flight chief, based on the definition of skills identified by the tiger team. Yet no formal training has been provided to those who completed MGT 101 (or ENG 485 for some of us). By the time we are eligible for MGT 585, we probably will not be assigned the environmental duties in the contingency area, so teaching the skills at that point may not be beneficial.

I have had a diverse career path to this point Base Level CEC & CEX, RED HORSE (554 Korea), & 16 AF Staff. My current job keeps me TDY alot. I spend large amount of time providing longterm continuity to the AEF rotations in the balkans (SFOR/KFOR. I also recently deployed several times in support of USAFR Cornerstone exercise to Macedonia to improve Med clinics & Schools. As a readiness officer I was in charge of the CAT III Silver flag training for my base. We had 9 Lts and 3-4 Capts at any given time. It was impossible to get all of them to Silver Flag for trainging in the 2-3 yrs you have them. Also what we train for in Silver flag and 101 when I took it was what we get evaluated on during inspections. Not nessecerily what we do when we deploy to the Balkans or to the Desert. Each of those contingencies have a much different flavor to them. If you go to the Desert (which I went to as a 2nd Lt w/ 3 months in service and a yr before I even attended 101) it is more like the CES you left back at your base just wiht longer work days and less to do after hours. If you go to Tuzla in the 1 deep CE Capt slots, you had better have good general knowledge of all aspects of CE and know how to work with the US Army and Contractors, or you will never get anything accomplished. You could also get a contingency deployment to 16 AEW at Aviano in which case you are one deep, but instead of working one base you have 10 with little or no CE support at those bases. On the non-commbat side of the contingency mission I have picked up a crashed F-16, done RED HORSE projects in Korea, Partnership for Peace in Macedonia, and AO at 16 th for earthquake reief missions in Turkey. In my opinion, the real world of CE contingency lies somewhere between the two realities they taught me at 101 in Fall 96-97. The reality of base level CE at a MOB and the reality of the worst case we could encounter in a full up war (RRR, Chem's, Damage Assetment/Repair) & which we pratice during Silver Flag & Prime Beef Training. The most important skills I have learned as a USAF CE CGO is how to pair & tailor CE teams to the mission I have at hand & how to work with contractors (LOGCAP, CONCAP, AFCAP, etc.)in an effective manner.

I have never had any training on how to request airlift, how to manage logistical end of a deployment, which is crucial when you are actually deploying. It would be extremely helpful to attend a class on those types of things. Also, while Silver Flag recognizes that CE emphasis should be on beddown operations (due to fact that we have never used RRR to really repair an airfield) rather than RRR, IG inspections /base level training have not yet made the switch. Is there anything you can do to help get the focus onto beddown functions at the base level (in IG inspections, base level exercises, etc.) and not so much on RRR? It makes sense to also train on skills that we will more often use in a contingency situation.

I have not ever been assigned to a deployable unit, which although out of the ordinary, there are many Captains in my situation. An officer of Captain rank, though, should be familiar with all of the items listed on the last page. Many things under Resource and Force Protection and particularly Contingency Mgt and Deployment Planning Actions I had never even seen before. First, the survey should include an "N/A" or other response because my answers will not provide accurate information if I don't even know what the item is referring to. Second, that should raise a red flag! These things should be discussed in Mgt 101 or during base training (even if not at a deployable base). The other sections mentioned (like Force Beddown) are introduced in Mgt 101 and discussed often. That way if you don't experience them firsthand during your assignments, you at least have some knowledge.

I recently returned from a 1-year remote at Kunsan AB, Korea. My initial OFE and other Silver Flag and Warrior Training Center (former SAC training site) experiences served me well during the 10+ contingency exercises, inspections, and real disaster recovery situations during my 1-year remote. However, it had been 6 or 7 years since I had attended the training, so I was a little out of date on the latest AF readiness concepts. The home station training was good, but I recommend an AFIT refresher training earlier than 8 years. I was not in the 8-year window prior to going to Kunsan. It would have been good to have had refresher training prior to going to that type of assignment or other contingency situations.

I think this is an important topic. I think the Air Force CE force is losing its combat ability, except for the RED HORSE squadrons. The best contingency training I have participated in was JRTC at Ft. Polk with the Army. I believe that because of money reasons this has ceased.

I would like more deployment opportunities, which I consider to be the best training environment.

I'm in Korea, the home station training questions aren't quite applicable - we don't deploy we fight right here. We also train and exercise more than most other units.

I'm not currently assigned to CE, but I spent 4 years in CE before coming to the Academy for a Special Duty Assignment. My only overall comment would be that CE needs to find more rewarding jobs for officers. I would have been happier in CE as an enlisted troop because they actually do real work!!!

In my experience, contingency training has almost always taken a back seat to day to day issues in the office. RED HORSE is probably the only way to be immersed in a truly "military" environment. Even during my two years in CE at Osan, Korea (the so-called "Tip of the Spear"), my BCE would spend much of his time in the office doing day to day paperwork during exercises, trying to stay on top of day to day requirements, and less time "playing war" with the rest of the troops. Much of this is forced upon him by the MAJCOM and their demands. This is so unrealistic it is frustrating. I feel like a civilian in uniform than a military officer trained to fight for and defend our national interests. After 10 years in the Air Force, I'm jaded and will separate.

In today's world of low-intensity conflicts, I think CE needs MORE hands on training in the field. More exercises with our counterparts, or at least more interaction with the units that we support in the field. This would give others a chance to understand what we do and why. It would also get us out doing MORE of what we are trained to do in a contingency.
Involved in peacetime disaster relief operations at Misawa AB resulting from a 7.5 earthquake. Also prepared chemical information for the SARAN attack in a Tokyo subway. Prepared 3 deployment teams during Misawa assignment.
It would be handy for the field to have some sort of Joint "dictionary"/smart booklet to help translate our field requirements when we are forced to use Army and Navy channels. Also, to have examples of their request formats. This would help folks in the field if they need to make emergency/urgent requests for mission requirements.
It's been a while since I've attended some of the classes you reference, so alot of my answers will be right down the middle. I think Silver Flag training provides good training for the technicians, but is lacking for Command and Control. Some of your questions referenced realism of training, but since I've never deployed I wouldn't know. Also, some of your questions were worded with "not" in the sentence so I had to stop and think about which answer reflected my opinion. If others do not read your questions carefully, you are liable to get faulty data.
Make sure your results are sent to the field.
Many of my comments may be outdated due to my assignments: 92-94 Altus; 94-97 823 RHS; 97-98 Grad School; 99-00 Kunsan; 00- USAFA. From these assignments I can only apply "CONUS Contingency Training" to Altus and the 823rd. Please let me know if you have follow-on questions.
Meeting the overnight bivouac criteria seems to be aimed at "checking a box". Silver Flag should count for this training or extended bivouacs should be the norm.
My answers may be a bit dated. I have been away from the CE career field since Aug 98. I do feel that if things have not changed significantly in that time, there is a lot of things that can be done to enhance warfighting readiness. Unfortunately, base level day-to-day needs usually preclude implementing these actions. Silver Flag training is great, if it could be added to regional training (Maelstrom, Ft Leonard Wood, Michigan, etc.), that might make it easier to get folks there more regularly. The big key is to decide whether our primary focus is going to be RRR/DART or Beddown and focus hard on those scenarios. Also, until higher headquarters can convince wing/local leadership of the importance of increasing training time 2 to 3 times its current level, I think minimal increases in effective training will continue.
My last year has been out of the CE career field.
My understanding of Silver Flag is that it exists for certification not training of CE and SVS contingency skills. Silver Flag is in the correct capacity as a certifier.
No CE training for officers/enlisted assigned to AIA units--would like to see them trained as well.

Not extremely clear on the purpose of your survey. I answered the questions based on the amount of contingency training I have received in the past few years (which is basically none). This base does not have a Prime Beef unit since it is under an A-76 study (this could have serious consequences for some of our Airmen when they PCS to their next base).

Officer education for Joint Operations is critical. The Army and Navy bring the largest amount of combat engineering capability to the fight. The AF's system of separate UTC's for manpower and equipment will often leave us with a team on the ground with no equipment other than the team kit they brought. If you can't speak Army/Navy lingo and understand their mission, you will not be as effective in accomplishing yours. Recommend developing Joint Service engineering classes for CE officers at multiple points throughout the standard career. Also recommend prohibiting white rocks on the base.

One thing I found as the chief of engineering in RED HORSE and as chief of engineering at Dhahran is CE officers have little or no design experience. This hurts mission capability if the contingency progresses into any type of sustainment mode. The design classes the CESS used to teach should be restarted.

Please consider my current duty station, Kunsan, when studying my remarks about base level contingency training. We train to fight from our base, not from a bare base or from a desert location. So, my training is adequate for contingency operations in Korea, but not in SWA or Bosnia. And my base level training at my last base, FE Warren, was piss poor so I would have answered all of the "base training" questions completely differently. For what its worth.

Prime Beef looks at equipment and material. Deploying to ONW or SWA (both of which I have been to), requires a knowledge on engineering issues such as design, construction management and contracting. AFIT needs to develop a class to cover (and review) these issues. Talk to anyone who has gone to the desert any time recently and they will tell you that it is impossible to survive without design skills and construction management experience. I suggest you talk to the 1 year BCE positions at SWA and I'm sure they will echo my comments.

Probably not a lot of value added here. I have been assigned as a Maintenance Officer in space units for the last 5 years and for a year prior to that I was a Looking Glass Engineer for USSTRAT. I have not performed classic CE Officer duties for approx 6 years and from about 5 months after Mgt 101. Dumped a lot of info and have had no exposure to current CES training programs.

Recommend moving the 585 course down for junior captains to attend because those are the ones who are made BCEs at places like Bosnia, Kuwait, etc.

Remember that you have engineers that are currently stationed at a base that is supporting a contingency. I have not been deployed for the past 18 months, yet everyday I live in a contingency environment and my squadron has double our authorized manning because of an on-going combat contingency that we support.

RRR and BRAAT scenarios are not viable any longer. If a deployed air base had any chance of being bombed, the airplanes would never be there in the first place.

Section 1 question b: My experience may be different than the experience for people that are not in PACAF. I went to Silver Flag training twice in one year because of the small amount of officers at my base.
Silver Flag focuses on "in combat, repair the base" training. CESS (575) seemed to focus on a broader experience while deployed. Home station covers some of the basics. I think that CE officers need regular training, not only in the "combat" environment, but in the deployed environment. Cover the entire gamut of what an officer may face. Use experiences of those who have been BCEs in the desert or elsewhere to develop a solid curriculum.
Silver Flag would be much more effective if active duty didn't have to go there with reserve/guard. This significantly lowers the training standard. Comparable to a marathon runner having to run with a couch potato, no challenge/value added. Additionally, the professional staffers should be required to go to Silver Flag. All too often CE squadrons end up with staffers as commanders that don't know anything about Prime BEEF or contingencies. We are going to get people killed. Especially true for those fresh out of the Pentagon. Readiness is second to base appearance.
Silver Flag: I feel the command and control portion of the training for the officers, as currently instructed, provides very little value added. Unfortunately, I don't have any suggestions for improvement. The specific craft instruction seems to be very good for the rest of CE. Home Station Training: Due to manning cutbacks and increased operations tempo, home station training neither has the attention of base leadership nor the amount of time needed for proper training. There is no time for this training because everyone is caught up with trying to keep the base from falling apart.
Since I haven't had Mgt 101 in so long (I'm scheduled for 585 in Feb 01) and I've never been deployed, I thought it inappropriate for me to answer questions about how realistic the training is/is not.
some of your questions are terrible, they ask the same question from opposite sides, nice statistical trick.
Spent 3 years in the 823rd RED HORSE. All the important things I needed to know my SNCO's and fellow CGO's taught me. As an RH1 member the entire time I found myself as the first engineer in country on several major missions, Bosnia, Haiti, Saudi, Panama, etc. and my training was a baptism by fire a close relationship from some solid mentorship. Schoolhouse is great to provide the routine items but mission success is carried by knowing what to do and when to do it with a healthy dose of having someone show you the right way early. Thankfully I had some excellent role models and mentors, I know those few seasoned veterans who can provide that mentorship are becoming very few. In fact of the 14 officers I served with, only 4 remain, not including myself since I separate from the USAF in April 01.
Survey too long. Many questions repeated in different words. SORTS -- Status of Resources and Training. Most of what I learned was in my ACC, AMC assignments and when I was a readiness officer. Until you have to do it you don't take the training seriously. The training course are good but the best way to learn is within the units if the emphasis is properly placed. This is a function of the wing leadership, deployment vulnerability.

The AF is severely damaging the capabilities of its CE troops by placing them in units that do not have UTC requirements. Units that have no UTC requirements should be civilianized as much as possible so that military can concentrate on their warfighting mission. Furthermore, staff officers and NCOs should have to conduct rime BEEF training alongside their host wing CE squadron so they stay current.
The CFETP for officers is useless. It does not address the items we need to know. Many of the younger officers are deployed to a contingency relatively early in their career (compared to other AFSCs) and expected to lead a large number of enlisted. Unfortunately, their training prior to deployment focused on AFA, CFC, or other meaningless additional duties. There needs to be a continuous emphasis placed on contingency training both at Home Station and CESS.
The first part of the survey was very, very repetitive. The same questions were being asked over and over, only worded slightly different. It also appeared that it had already been determined that contingency training was inadequate and the sole purpose in gathering the survey data was to prove this point. It would have been better if the survey had been presented from a neutral (unbiased) standpoint and have the results speak for themselves. The way the survey was written almost inclines the respondent to have a negative leaning in their answers. The results might show that contingency training is in bad shape even if it isn't or that it is worse than it actually is.
The last training available to me was over 3 years ago. Many of my responses are the best recollection I have.
The problem with CE training is that it ALWAYS takes a back seat to base level O&M. This is to no fault of the BCE. The problem is that CE training DOES NOT MATTER to Wing Commanders!!! Therefore, there is never any time to do it.
The technical classes that were offered at CESS (HVAC, controls, power distribution, facility design) were invaluable. Since these courses have been removed there is no training going on to fill the gaps.
The training we do is adequate considering the contingencies CE troops have faced in the past ten years. Our track record proves this. However, our training requirement includes tasks that we have never had to perform (RRR). The RRR training we receive does not adequately prepare us to perform the task real world. I do not think we would do very well at this, within the given time constraints, if we had not perform RRR. I also think we should stop training to do RRR because it's a cold war requirement that we'll never use.
There is currently a disconnect/redundancy between Silver Flag Training and Phoenix Readiness. Both claim to gear more toward MOOTW. Do we really need both training opportunities from a CE perspective. Is there a way to consolidate this effort? Either way, it has not been made clear how each compliments the other, nor how Phoenix Readiness really helps us.
This is an extreme challenge for our career field. The training at Silver Flag will never be completely realistic, but i believe it is very important... and pretty good overall.
Though I have never truly been deployed, I have participated in many bivouacs and exercises, as well as leading the exercise evaluation team for my CE unit.

Too much of our CE training is done in isolation. SILVER FLAG was originally supposed to bring the entire combat support group together. This is vital for realistic training. The only good training for an operation like Haiti, Bosnia, etc requires lots of role players and joint service participation like is available at the JRTC (Fort Polk). We need to make this training opportunity available to CE.

Training for mid level capt should "refresh" our knowledge of contingency operations. Also, introduce us to the new theories and practices being taught since the 4 years ago at MGMT101. Maybe even use these capt that have been places and may have had a chance to use their skills in the field to brainstorm and share how they worked things out. A one week class with an additional few days to check out any new equipment/assets in a field environment, ie. OFE setting.

We (the career field) kills itself with massive amounts of video training requirements. I can understand watching them as part of squadron inprocessing, but there are way to many out there and you usually see them at silver flag anyway. I have a big problem with CE training as it relates to SORTS reportable issues, especially in today's undermanned-overworked, deployment environment. There just is not enough time in a year to waste hours watching a video tape you've seen several times over. Silver Flag does a great job providing refresher hands on skills training and I'm glad to see the frequency requirement extended to every 30 months. OFE provides a great first look at what CE does. Other than that, we all know where CE's priorities lie when it comes to day to day operations at base level.

We, Engineers need to focus on our core competencies of engineering. Our biggest asset is our ability to "Problem Solve". We never solve the same problem twice and need to continue training our young officers to think for themselves and extrapolate high quality solutions independent of some type of "book answer". High quality training is important but irrelevant if the opportunities to do so are limited by our schedules. Training is always in addition to productive work not in-place of. This is a critical problem. Also, Senior leaders in our careerfield are notorious for setting a bad example at participating in training. (No Spell Check, so sorry if I spelled something wrong)

When doing the survey, <http://cessmil.afit.af.mil/contingency/3.htm> would not load properly (I tried several times), allowing me to fill in the bubbles, FYI. Good survey, thanks.

Whether trained or not, the AF sends officers into to contingency situations to "sink or swim". Some say it is a "test" of an officers' leadership abilities; I call it dangerous.

While the knowledge of RRR and other skills are absolutely essential for victory in a large-scale conventional war, the contingency environments we face today do not use those same skill sets. Training might benefit if the AF decided to teach 2 different contingency environments - the full-up ATSO and the humanitarian/sustainment with emphasis on anti-terrorism and terrorist CBW attacks. We could teach the cold-war conventional warfare less often and the emerging threat/humanitarian operations could receive more frequent study until the USAF faces a more substantial conventional threat.

Your survey seemed somewhat negatively oriented. Your report must consider that the training is appropriate at different stages in professional development. For example, the AFIT classes are not the answer to all needs, but do provide a valuable first start. Home station training does not have the depth, but does re-inforce. Silver Flag is not a war environment, but it takes the training environment further than can be achieved at the base. There is no substitute for the real thing, and leadership combined with proficient troops will succeed in the contingency environment.

Major Additional Comments

585 and CESS do a great job, but don't provide all training for contingency environment,...I strongly believe that raw experience is the "best trainer" 585 was a good course when I went a couple of years ago.

A distinction should be made on the definition of "training." My answers to the questions state that neither Silver Flag or CESS are adequate to prepare me for a contingency. What is critical that these schools cannot provide is EXPERIENCE. It is critical that our officers become engineers, able to make engineering decisions. When I was a LT, most LTs went to the design section for 1-2 years to learn how to be an engineer - you may have an engineer degree, but you are NOT an engineer until you can apply that. Now our LTs in Design simply oversee A&Es, and do not do much hard-core design. What will happen to them in the field when they need to be an engineer? Our career field needs to go back to "training" LTs to be engineers by letting them BE engineers on the job. Once they can accomplish some of those skills, they can move on to other branches of the squadron.

As Chief of Contingency Operations in the Readiness Division of HQ USAFE, I can tell you from experience that the most important contribution Civil Engineers make as part of the planning for contingency operations is the ability to tell the operators whether or not a particular airfield is suitable for whatever type of aircraft they want to put there. If I could change any one thing about CE officer training it would be to establish a class that focuses on airfield site survey techniques to evaluate airfield pavement condition and load bearing capability. Other potential topics include MOG determination, utilities/construction materials availability, and explosive clearance zones. As it stands now Air Force Civil Engineering doesn't really have this capability.

At present, HQ AFSOC/CE does not participate in the host BCE's home station training program. My input regarding the adequacy of my current training was based on my accumulated knowledge from attending AFIT's MGT 101 and 585 courses, a 1-yr remote assignment to Kunsan AB ROK, ACSC residency, and self study.

Being in RED HORSE, I am not sure it was appropriate for me to fill out the section on home station training. RED HORSE is nearly all training -- so I am very satisfied with how I am being prepared for a contingency operation. Also being a former AFIT instructor for contingency engineering you may want to disqualify my survey questions regarding the quality of instruction. I was/am proud of the contingency courses and feel the quality is excellent. You may take that as a bias. However, I do feel that it would be money well spent to expand contingency courses at AFIT and Silver Flag. There is too much time between 101 and 585. 585 is a great class but it isn't the going to make someone fully ready to lead in a contingency. It is a starting point to build on and a clearing house for the latest information and to cross-feed with peers.

Despite our best intentions, I think our training standards are pitifully low. We really need to spend more time in the field and more time training with equipment we will use during a deployment, overseas or otherwise. For the moment, OSW and ONW are filling part of that bill for training on Harvest Eagle equipment, but those Ops won't last forever. Is one night in the "field" sleeping in a tent really valuable training? I've seen units which pitched tents next to their squadron building in a park to meet the annual "bivouac" training requirement. Thankfully, I've also been blessed to have been in units where the commander took their responsibilities to keep people wartime trained more seriously, and we had 3-4 local field training exercises (FTX) per year. That's good, but it's clearly over and above the requirement. The Cat I training needs to be scraped or re-written. Watching videotaped sound-on-slide presentations from the 70's and 80's is neither a motivator, nor good training. Our airmen and lieutenants instantly turn off as soon as they hear the narrator say "Soviet threat." Another serious deficiency in our training is the basic infantry skills we are expected to maintain. Both our AFIs and the SFS AFIs and our doctrine require us to maintain this capability. The training we receive now is generally "on-the-fly," and usually focuses on movement techniques. Our officers need to understand the basics of command and control of ground combat forces. We need to know how to coordinate fire support, make a "movement to contact" for clearing and security operations, how to employ crew served weapons (like the M-60...my squadron has 4 in the armory) and how to establish a blocking position to support SFS maneuver forces. Some read books and talk to our counterparts in the SFS to learn this, but most don't and learning it on the battlefield is too late. Finally, some basic military skills are lacking. In addition to military map reading and land navigation training, radio communications, vehicle and aircraft identification. I would encourage you to look at the US Army Engineer Officer Basic Course which I think has a great curriculum. By combining the good things we already do with some of the good things our Army counterparts are doing and we'd have a curriculum second to none. I'm glad you're doing this review, please feel free to call me if you'd like to discuss further.

Didn't know there is an CFETP for officers! I don't know what "scenarios" are involved in MGT 585--when I attended the class there was no exercise portion. I don't think AFIT or Silver Flag should compensate for poor home station training by including exercise scenarios in what should be technical training. I believe, especially for officers, that exercises independent of other base agencies are too contrived to improve training for real contingencies. My personal experiences are aircraft accidents and reception of units for Kosovo. Therefore, my most valuable training has come from two areas: Home station PRIME BEEF training/MAREs and ACSC training on joint/multinational operations.
Enlisted training at Silver Flag is great. Officer training seems to be an afterthought. CESS classes are good, but need a class for mid- or jr-Capts in between OFE and Cont CC course. Home station bivaacs are only as good as the scenario or training lesson plans. Less than a week in the field is useless -- you spend all your time setting up or tearing down.
Excellent survey.
For the past six years I've not been a mobility position and therefore have not received cont training. It was difficult to give a true assessment of quality of training not having recently attend Silver Flag or any other cont training.
Great things are done with the training we get right now, but we need more money to get more training. More importantly, the chemical mask needs to provide less breathing resistance if we're going to use it for long-term operations in very warm and humid climates.
Have fun putting the data together. Good luck on the remainder of the program.
I am currently assigned to a base with a contracted operations flight. There is no UTC. There is no training. I have had training and experience but the Lt's in the squadron are being a disservice by not being exposed to that aspect of Civil Engineering.
I am not a career 32E officer. I completed one tour with CE as a Sr Capt/Maj. I attended Silver Flag, CESS Mgmt 101 and Mgmt 585. I also spent 134 days at PSAB as Chief Engineer. I completed the survey based on my experiences and observations.
I am sorry to say that PRIME BEEF training is not as important at base level as keeping the grass cut.
I attended contingency training at Eglin in 1983 and 1984, then participated in our own Red Horse contingency training in 1985-86. Since I never attended the Silver Flag versions, I cannot provide meaningful comment on that training. In recollection I believe the training was appropriate. I am not currently assigned to a CE squadron so I cannot comment on current emphasis. When I was the readiness chief several years ago the commander fully supported home station and deployed training, plus fielding a Readiness Challenge team.
I helped write the CFETP (I read the final version out of morbid curiosity) I was deployed with SHINING HOPE during the Kosovo campaign as the USAFE engineering rep for JTF-SH Forward.

I hope we can improve training to match the demands of the real world environment. In today's day and age, our "temporary operating locations" (i.e. PSAB, Jaber, etc) are more like permanent bases...with all the daily demands. Not a lot of base denial going on...good luck!

I may be the odd duck, so a little information to clarify and not skew results. I am a prior enlisted (Engineering Aide) with 23 years as a CE type. As an officer, I have been a Readiness Officer and the In-Country Engineer for Reception and Beddown for Operations Desert Shield, Desert Storm, and Provide Comfort. I bedded down Special Forces, Radar and Comm units, and a Marine Expeditionary Unit. I went on to get a PhD through AFIT, and since have not been back to a base level assignment (AFOSR and HQ Airstaff). I have not attended an AFIT CE course in over 10 years, nor deployed to Hulbert Field for training in over 10 years.

I mentioned I think there is a big gap between MGT 101 and 485. I received more Prime BEEF training as a 2Lt-Lt than I did as a Capt (and I was overseas my entire Captain years--Aviano and Ramstein). Sort of ironic. When I attended the 485 class, I realized I had hardly ANY contingency hands-on experience (aside from one 1-month deployment to the desert as a Lt). The class participation where students gave a run-down of their contingency experiences was most helpful. Despite how many schoolroom classes you attend, there is nothing like actually going out into the field for hands-on experience. I know there is great training out there. I was fortunate to go to Albania to watch our CE folks in action (I was only an observer). Good luck on the survey!

I think you will find in the answers to the questions above that neither Silver Flag training, home station training, nor Formal classroom training by themselves will adequately provide the necessary training for contingency operations. However, in concert with one another if Silver Flag deployments are on scheduled intervals as well as home station training, then the majority of contingency training requirements are met and should remain current. Additionally, the day to day responsibilities and responses required in a normal Operations Flight at a base with a flying mission round out and enhance the ability to prepare for and respond to real world contingency operations.

I will be deploying in Jan 01 for 120 days (not part of the AEF 90 day cycle) to support a CENTCOM tasking.

I've been on a non-mobility staff job or at a non-mobility overseas location (Thule) for several years, so my knowledge of readiness training programs is rusty. In general, I believe there is too little training on the logistical, technical, and personal challenges a deployed BCE would face during the first 3-6 months of a major contingency. 101 is fine but the LTs get a firehose and may not retain much after a year or two. 585 is very good but comes too late and too infrequently--I'd like to take it or something like it at least twice, maybe 4 or 5 years apart.

Leadership and management training is critical. Contingency engineering, contracting, and construction management training should be stressed. The Air Force is getting away from the technical skills that engineers in the field need to be successful. Most LTs in engineering don't design anymore, but in the field they have too. Technical design skills are almost as critical as the leadership skills. Additionally, too much outsourcing and privatization will further degrade the skill base available for contingency operations. Our day to day jobs need to be able to reinforce those skills we will use during a contingency - but the ability to do that is going away.

My impression of 585 (three years ago when I took the course) was it copied too much from 101. The course needed a better perspective of how to be an OIC in a Contingency situation. Many of my comments are the courses reflect this feeling. When I took/taught 101, I honestly felt it was the best course at AFIT. I assume it has changed some to de-emphasize repair tasks and emphasize more beddown tasks. If that is true, the course is very useful to young officers.

My present duty assignment is Kunsan AB, where we fight in-place here (may explain some answers). Training is good here because of the threat but outside of Korea (especially in CONUS), Readiness training is not given high priorities.

My Silver Flag experience is two-fold. I attended the course as a "student" back in the BRAAT days. I have not attended Silver Flag as it exists today. However, I now command the PACAF Silver Flag site, so I am intimately familiar with the training provided.

One of the most beneficial things I got from Mgt 585 was the cross-tell about others' experiences on deployments. It was educational (and often entertaining). Moreover, hearing those lessons-learned really helped later when I led a Prime BEEF team deployment to Saudi.

Our training/exercises are geared towards passing ORIs and meeting worst case war time missions (something we haven't seen since Vietnam), not towards meeting our contingency mission. Deployments bear very little semblance to bivouacs, SORTS, etc.

Overall I think training is on target. Another spinoff issue entirely is the deployment "haves" vs. "have-nots" in the CE world. Some people have gotten to go the war several times, and have racks of ribbons (and stories to tell) a mile long. Others of us who want to go are spending our time stuck at CONUS bases making sure the right trees are being planted on the Four Star's lawn. Who would you rather be? No doubt about the fact that there's luck involved in the timing of who goes where...and some people with families are happy NOT to deploy, so there's no changing the system as far as I can tell. It will be interesting to hear the deployment statistics. Good luck with the thesis.

Questionare was a little confusing. With past surveys I have been use to answering the majority of question with posivite answer. Your survey bounced back and forth between positive and negative answers. This may have been your intention. Need a way to tie your areas together. Formal contingency training (Mngt 585 and 101), field training (Silver Flag) and home station training can not stand alone. They all work together to provide a comprehensive well-rounded package. Homestation training provides the foundation with field training and formal training providing more specifics. Just a comment the best training for contingency operation, other than participation, is being an Operations Flight Commander or Maint Engr.
Silver Flag training is essential. It provides excellent hands-on experience to supplement AFIT and home-station training. More opportunities should be provided to enable CE officers to attend Silver Flag more frequently.
Some of my responses regarding home station training reflect the fact that my current base is undergoing the A-76 process. We are not assigned to an AEF and do not anticipate any large deployment. We are meeting minimal requirements, but contingency training has been deemphasized.
Unfortunately my comments on this survey will not be of much benefit. It has been more than 12 years since I took the Basic CE Course at AFIT. I do not remember what was covered and to what detail. I am also in Special Duty assignement and removed from the CE einvironment. I am stationed at an AETC base with no Prime BEEF requirement which further hinders my ability to comment on CE Contingency Training.
We do a good job training for our combat and contingency roles. However, our day-to-day base support responsibilities still overshadow our true military purpose and all to often takes priority. To be truly ready, we should spend more time preparing to be real Combat Engineers. Overall, the AF Civil Engineering force needs to be structured more like RED HORSE and the SEABEES. There is a reason why we wear the uniform.
Your survey seemed focused on CESS. CESS is an education environment. many of yuou rquestions seemed to focus on hands-on training, which is normally a unit responsibility. Don't get education (one time experience) confused with training (repetition of tasks).
Lieutenant Colonel Additional Comments
AF Reservist (IMA) never called to duty for a contingency. I did attend Contingency Engineering back in 1982, while still on Active Duty. Off aCtive from 1983 til 1999. Recently assigned to the AF/RE staff as the CE responsible for all aspects of installations for the Reserve Component.
AFIT should offer a senoir level Contingency Operations course for officers at the 12-15 year point that concentrates on breadth to prepare CE officers for leadership roles.

Contingency Training is sometimes given a backseat to real world operations at most bases. This is a real dilemma given the dual role of the civil engineer (base maintenance and warrior). If we are going to keep our contingency skills honed, we need to get our troops away from the base...and Silver Flag is a great way to do this. Home Station training must be married with deployed training to make it effective!!! There is no better way to train for an event than to actually deploy and operate as if you would in an actual contingency. Silver Flag must remain as part of our core training experience.

Critical to ensure officer corps and senior NCOs within CE can fully operate in joint arena... must know rank, structure, how they do things, their doctrinal missions, etc.

First of all, you have made no provisions for the old folks like me who had 485 (prior to the creation of the MGT 101 format you have today). Thus I didn't respond to the 101 questions. I left out my responses on how effect the training is for a couple reasons, 1) I have not been assigned to Prime BEEF for 10 years; 2) I have not been to a course for 4 years; and 3) the effectiveness of training is dependent upon the the home station training program, thus the commander, Readiness Officer, and instructors.

Good survey, but many of the answers, as you may already know, are not simple yes/no. Many of our actions are based on the environment we located within. Be it natural disaster or contingency operations support. Our challenges are constrained by the "day to day" priorities which impact M/R operations and planned RWP. The key is to build as much "flexibility" as possible in our operations. Also the instructional criteria, I assume, has changed quite a bit since I completed the MGT 585 course; but the goal remains the same to deploy, set-up contingency operations to support a designated mission in the minimum amount of time possible. This requires that we continue to select the best officers and NCO in our units and get them trained to understand Wartime Contingency Operations and it's associated functions (as referenced in the knowledge of LOGPLAN, MANPERS, and LOGDET references). Thank you for the opportunity.

Good Survey...as a former instructor of ENG 485...this survey should help focus the course appropriately. Always felt the best money made was the discussion of "experiences"...and "lessons learned"...and with all the recent/past events there should be lots of these now.

Home station training has not kept up with Silver Flag in either equipment or videos/lesson plans. Staffing our Readiness Flights with only DP personnel has hurt our ability to organize, train, and equip our Prime BEEF teams. The DP personnel lack the experience and understanding of the CE mission to carry out this task.

I hope my chad were punched all the way through. I want my vote to count. Silver Flag should be increased and expanded. It is very valuable. I would also expand what the AFIT School of Civil Engineering offers and provide education at three or four points in an officer's career. Good Luck with the Thesis it brings back memories.

I quit doing the survey after answering the same question over and over. This survey needs considerable work.

I say I have never completed MGT 101 or MGT 585. I completed both courses in the mid-80's. Since the courses have completely changed since then, I consider that I have not met requirements for either of the current courses.

I would recommend formal contingency field training for CE officers at the 1-yr, 5-yr (jr Capt), and 9-yr (sr Capt) points in their career.

I'm sorry I wasn't any more help than I was. Im a Lt Col with 18 years in. All the readiness courses were a little different when I was a lieutenant and going to Hurlburt Field for our RRR training was a unit level responsibility and it took me over a year and three or four TDYs to the school house to get what is now taught in MGT 101 and the 585? course. Best of luck.

In my opinion, CE and the AF needs to reconsider our CE Doctrine in terms of contingency ops, in particular - RRR. Don't believe we'll be in that scenario where we have to relaunch airplanes after a base attack. It's the old WWII/land war in Europe scenario. With today's ability for power projection, and involvement in MOOTW, more emphasis is needed in force beddown, and redeployment, than RRR. If we're to stay with RRR, then we need the equipment and supplies to train in modern terms with repairs that work with today's aircraft. AM2 matting isn't effective, we use Folded Fiberglass Mats which aren't readily available at many bases for training. Also, shortages of 750KW generators, ROWPUs, MAAS, and Airfield Lighting hamper the training program. Admittedly, it's been awhile since I deployed to Silver Flag so some of this thought process may be in the works or already accomplished.

Many of these questions ask for a single answer yet we are to draw from a career of experiences. Some bases I have been assigned had an excellent PB training program and others were not. A good PB training program is a function of the commitment by the BCE and Readiness staff.

AFIT courses are good for their intended purpose, but there is no substitute for field experience.

Mgt 101 should be scheduled for new accessions before sending them to short tour assignments. It makes the Lt more valuable to the unit, as well as eliminating a significant break in training for the individual in the squadron.

More time for effective home-station training is required to better understand specifics for that particular base. All too often a base plans for generic contingencies, which isn't all bad, but then takes away valuable time to train for their specific contingency missions.

My sense is the training courses offered are adequate as long as home station training is routine. I do believe a hands-on refresher course for officers returning to base level from staff assignments would be very beneficial. Most staff folks have been away from the field for 2-5 years.

Real emphasis needs to be put on upgrading the current Cat I Homestation Training program. Current info is dated and often times redundant from one section to another.

Ref question e: I've recovered bases from natural disasters on several occasions (hurricane, flood, wind storms) but I've not deployed just for that reason.

Ref question f: I deployed to Team Spirit, and I was in DESERT SHIELD/STORM.

Silver Flag training is outstanding overall. The only change should focus on command & control practices during the week long training instead of just listening to a lot of briefings and taking tours.
Some of the questions in each of the first 3 sections asked if that training (i.e. Silver Flag, Home Station, AFIT) was sufficient to prepare us for contingencies and I responded in the negative because together I believe they are sufficient - but none of them standing alone are sufficient.
Though I haven't deployed much myself, I have been very involved in contingency operations (former MAJCOM Readiness Division Chief) over the past several years.
Tough to answer most of these questions. Been at a Staff type assignment or short tour assignment too long.
Training for civil engineering officers and enlisted is weak in Jointness. We will never deploy as a single service, yet we don't make the efforts to train, meet with sister service engineers. Also, need more training in AFCAP type of products.
We need to develop our officers to be air warriors first and engineers second. The issues in this survey are right on. We need more training and more often.
We need to learn more about Joint logistics support.
When do we see the CFETP? Need better CESS training - mix some hands-on with classroom tng. Civil Engineers do fine but more off-station training is needed...home station is too busy with day-to-day. We'll never find time at most bases given current TDYs, workload and manning.
You'll notice the Homestation training section is blank. That's because I'm currently at HQ ACC (hence it's N/A). All three legs (silver flag, home-station and AFIT) are critically important and must be given time, resources and importance.
Colonel Additional Comments
As an AGR, my career path has not been that of a typical CE officer.
At this stage of my career I've based most of my answers on experiences from a few years back. I last left base level command in 97. I do have extensive experience as a readiness planner both at Centaf in 80s and air staff in 98-99. Thanks for opportunity to participate.
I attended the Silver Flag equivalent in 1979 and Mgt 101 in 1978, so my personal experiences are very dated. I based my responses, however, on fairly good knowledge of the current courses from the feedback of my officers who attended within the past 5 years, and from my staff experience with AFIT and Silver Flag.

I have not attended Silver Flag in a capacity that would provide the training you queried me about in this survey. Nor have I attended the MGT 101 or 585 courses recently (I attended Contingency Engineering over 15 years ago). In my current position and rank I found it difficult to answer these questions objectively. If deployed now it will be in a different capacity as an O-6 than I did as an O-5 BCE. The hands on training discussed in this survey is helpful to have knowledge of but not actual performance. However, it is critical to send my people. Silver Flag provides Excellent training but it needs to be tailored more towards our AEF mission. This includes preparation for deployment, operations in heightened threat conditions, use of contractors and ATSO. I believe there will be less of an opportunity to do RRR but more of an opportunity to do humanitarian base recovery or base development. More emphasis should be placed on beddown planning and execution of that plan.

I took MGT 101 and ENG 485 in 1981, the course has changed greatly that's why I only answered importance of area in survey.

Practice and evaluation scenarios need to be relooked for relevance in the new century. Too often we are practicing for the last war or two and not the projected fight. Need to adjust scenarios to place emphasis on the next fight!

Putting the time and attention into our wartime mission is extremely difficult. Supporting the flying wings so THEY can practice their wartime missions (also important) leaves little time for CE to hone wartime skills. Many wing CCs consume whatever time remains with special projects. I don't know the solution, but I'm well aware of the problem. I had success with several wing commanders in selling the importance of CE training, but some simply won't listen.

Ref e above: As a C-130 pilot, I have flown multiple humanitarian missions in Europe and the Pacific, but have never deployed as a CE ground-pounder.

The questionnaire seemed to single out Silver Flag training and differentiate it from home station training. It was tough to decide how to answer some of the questions. Seems to me that Prime BEEF training should be considered in totality - I definitely believe the overall benefits far outweigh the sum of the parts.

The reason I answered the questions about the SF training the way I did, was when I went, I was a Squadron/CC and the bed down portion of the course is really geared to the Major and below level. Also, I had the other two CE Schollhouse course, but I was a Lt and Captain at the time and hence was back in the late 70's and 1982 timeframe so the courses I'm sure are different now.

The value of my participation in this survey is probably very limited. My first 18 years were spent as a Disaster preparedness officer. After that, I commanded two training squadrons, and served as a deputy group commander in training and support. My only CE experience has been staff tours with AFCESA and AETC. Having said that, I think what you are doing will prove very worthwhile for the career field. Sorry I couldn't help more.

Bibliography

1. Alreck, Pamela L. and Robert B. Settle. The Survey Research Handbook. (2nd Edition). New York: Irwin McGraw-Hill, 1995.
2. Buchanan, Tom and John L. Smith. "Using the Internet for Psychological research: Personality Testing on the World Wide Web," British Journal of Psychology, 90: 125-144 (1999).
3. Canadian, Military. "Report of the Somalia Commission of Inquiry." Canadian military report. AFIT library FirstSearch was utilized to find. URL not available. July 2000
4. Cannan, David M. Air Force Civil Engineering Wartime Training. US Army War College Military Studies Program Paper. US Army War College, Carlisle Barracks PA, March 1988 (AD-A194093).
5. Civil Engineer and Services School. "MGMT 101: Introduction to the Base Civil Engineer Organization." CESS Course Catalog Description. 2 pages. http://cess.afit.af.mil/mgt_101/catalog_descipt.htm. 10 Jan 2001.
6. Civil Engineer and Services School. "MGMT 585: Contingency Engineer Command Course." CESS Course Catalog Description. 2 pages. http://cess.afit.af.mil/mgt_585/catalog_descipt.htm. 10 Jan 2001.
7. Cloud, Dan Red. "1999 Civil Engineer Unit Education & Training Managers Workshop." PowerPoint presentation slides presented by HQ/AFCEA. 1999.
8. Corporation, WebSurveyor. "How Do I Conduct a Web Survey?" Excerpt from unpublished article. n. pag. <http://www.websurveyor.com>. December 2000.
9. Department of the Air Force. Air Force Civil Engineer Contingency Concept of Operations. Washington DC: HQ USAF, September 1997.
10. Department of the Air Force. Air Force Doctrine Document 42: Civil Engineer. AFDD 42. Washington DC: HQ USAF, December 1994.
11. Department of the Air Force. Civil Engineer Officer: Career Field Education and Training Plan. CFETP 32EX. Washington DC: HQ USAF, July 1998.
12. Department of the Air Force. Commander's Procedural Guide: Obtaining Training in Support of EAF and Utilities Privatization. Tyndall AFB FL: HQ AFCEA, February 2000.

13. Department of the Air Force. Contingency and Disaster Planning. AFPAM 10-219, Vol 1. Tyndall AFB, FL: HQ AFCESA, December 1995.
14. Department of the Air Force. Contingency Training Guide and Task Standard. AFPAM 10-219, Vol 10. Tyndall AFB, FL: HQ AFCESA, September 1998.
15. Department of the Air Force. Headquarters United States Air Force, Program Action Directive 99-01, Expeditionary Aerospace Force Implementation. HQ USAF PAD 99-01. Washington DC: HQ USAF, July 1998.
16. Department of the Air Force. Prime Base Engineer Emergency Force (BEEF) Program. AFI 10-210. Washington: HQ USAF, July 1998.
17. Department of the Air Force. "Prime BEEF: Concept of Operations." Unpublished planning guidance for Air Force Civil Engineers. 8 pages. <http://www.afcesa.af.mil>. No Date
18. Department of the Air Force. Procedural Guide for Civil Engineer. Tyndall AFB FL: HQ AFCESA, June 1999.
19. Department of the Air Force. Silver Flag Exercise Site: FY00 Predeployment Information for Civil Engineers. Tyndall AFB FL: Detachment 1, 823 RED HORSE Squadron, October 1999.
20. Fink, Arlene and Jacqueline Kosecoff. How To Conduct Surveys. Beverly Hills, CA: SAGE Publications, Inc, 1985.
21. Gleason, Donald L. Civil Engineering Prime BEEF Contingency Training -- Preparation for the Spectrum of Operations. Air Command and Staff College Research Paper. Air Command and Staff College, Maxwell AFB AL, March 1997.
22. Hair, Joseph F. and others. Multivariate Data Analysis. (5th Edition). Upper Saddle River, New Jersey: Prentice-Hall, Inc., 1998.
23. Hartzer, Ronald B. "Foundations for the Future: A History of Air Force Civil Engineers." Excerpt from unpublished article available from AFCESA. 6 pages. <http://www.afcesa.af.mil>. January 2001.
24. Kirkpatrick, Donald L., "Great Ideas Revisited," Training & Development, 50: 54-60 (January 1996).

25. Lawrence, D. Wade. An Investigation of the Relationship Between Perception Levels of Prime BEEF Training and Readiness Task Confidence. MS thesis, AFIT/GEE/ENV/97D-14. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, December 1997. (AD unknown)
26. Lupia, Eugene A., "Supporting Operation Allied Force," The Civil Engineer, 7: Intro (Summer 1999).
27. Morris, William C. Analysis of the Perceived Adequacy of Air Force Civil Engineering Prime BEEF Training. MS thesis, AFIT/GEM/DET/85S-16. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1985 (AD-A160869).
28. Murphy, Brian. CGOC Civil Engineer Assignment Manager. Personal correspondence on manning data. December 2000.
29. Online, Write Design. "Famous Quotes." Excerpt from unpublished article. n. pag. <http://www.writedesignonline.com/resources/quotes.html>. February 2001.
30. Rodeghier, Mark. Surveys with Confidence: A Practical Guide to Survey Research Using SPSS. Chicago: SPSS, Inc, 1996.
31. Schuliger, John D. Position Paper on Civil Engineer Officer Training. Personal Research at CESS. July 2000.
32. Simsek, Zeki and John F. Veiga. "The Electronic Survey Technique: An Integration and Assessment," Organizational Research Methods, 3: 92-114 (2000).
33. Smith, Christine Biship, "Casting the Net: Surveying an Internet Population," Journal of Computer Mediated Communication, 3: (1997).
34. Smith, Emmitt G. An Examination of the Air Force Civil Engineering's Prime BEEF Home Station Training Program. MS thesis, AFIT/GEM/LSM/84S-25. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1984 (AD-A146957).
35. Stanton, Jeffrey M. "An Empirical Assessment of Data Collection Using the Internet," Personnel Psychology, 51: 709-725 (1998).
36. Waggoner, Dean L. and M. Allen Moe. A History of Air Force Civil Engineering Wartime and Contingency Problems From 1941 to the Present. MS thesis, AFIT/GEM/LS/85S-23. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1985 (AD-A161142).

Vita

Captain Rusty J. Vaira graduated from Lambert Public High School in Lambert, Montana in 1990. He graduated from Montana State University with a Bachelor of Science degree in Civil Engineering in 1995. He was commissioned through the Detachment 450 AFROTC at Montana State University where he was recognized as a Distinguished Graduate and nominated for a Regular Commission.

He entered active duty in July of 1995 at Beale Air Force Base, California, and was assigned as an environmental engineer. In June of 1998, Captain Vaira was transferred to the 6th Civil Engineer Squadron at MacDill AFB, Florida where he was the Readiness Flight Commander. He was then selected to attend the Graduate Engineering and Environmental Management program at the Air Force Institute of Technology at Wright-Patterson AFB, Ohio. After receiving a Masters of Science Degree in Engineering and Environmental Management, Captain Vaira was assigned to the 819th RED HORSE Squadron at Malmstrom AFB, Montana.

REPORT DOCUMENTATION PAGE				<i>Form Approved</i> OMB No. 074-0188	
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to an penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 20-03-2001		2. REPORT TYPE Master's Thesis		3. DATES COVERED (From - To) Aug 1999 - Mar 2001	
4. TITLE AND SUBTITLE AN ANALYSIS OF CIVIL ENGINEER OFFICER CONTINGENCY TRAINING				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
				5d. PROJECT NUMBER	
6. AUTHOR(S) Vaira, Rusty J., Capt, USAF				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(S) Air Force Institute of Technology Graduate School of Engineering and Management (AFIT/EN) 2950 P Street, Building 640 WPAFB OH 45433-7765				8. PERFORMING ORGANIZATION REPORT NUMBER AFIT/GEE/ENV/01M-22	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Det 1, 823d RED HORSE (Silver Flag Exercise Site) Attn: Lt Col Nathan Macias Tydnall AFB FL 32403-5319 DSN: 523-8702 Comm: 850-283-8702				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The primary objective of this research was to investigate the current overall civil engineer officer contingency training program and determine if civil engineer officers think it is adequately preparing them to perform in a contingency environment. In accomplishing this objective, this research explored the perceptions that officers have about the contingency training that is available through three primary training programs (Home Station Training, Silver Flag training, and Civil Engineer and Services School training). The overall intent of the author was to gauge how the officers feel about their contingency training and offer some suggestions on how to improve the training. To collect data pertinent to this research, a web-based survey was developed and civil engineer (CE) officers were asked to provide answers to demographic and training perception statements. The results from this study show that from an overall perspective CE officer training is adequately preparing them to perform in a contingency environment. However, the results also indicate that there are several areas where improvements could be made to make the program even better. These improvements range from allowing more officers to attend Silver Flag training to introducing an additional contingency training course.					
15. SUBJECT TERMS Civil Engineering; Training; Deployment; Survey					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT		18. NUMBER OF PAGES
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U	UU		196
			19a. NAME OF RESPONSIBLE PERSON LtCol Alfred Thal, Jr., ENV		
			19b. TELEPHONE NUMBER (Include area code) (937) 255-3636, ext 4591		
Standard Form 298 (Rev. 8-98) Prescribed by ANSI Std. Z39-18					
				<i>Form Approved</i> OMB No. 074-0188	