

# Assessment of Changes in Marines' Perspectives During the GCE ITF

## Volume 1: Data Analysis

Michelle Dolfini-Reed, Elizabeth Bradley, Bradley Dickey, Yancey Hrobowski, and Jessica Wolfanger with Craig Goodwyn, Cathy Hiatt, Laura Kelley, Kletus Lawler, Lauren Malone, and Charles Nickerson

August 2015





This document contains the best opinion of CNA at the time of issue.  
It does not necessarily represent the opinion of the sponsor.

**Distribution**

Cleared for Public Release; Distribution Unlimited. Specific authority: N00014-11-D-0323.

**Photography Credit:** U.S. Marine Corps PFC Cristina Fuentes Montenegro of Delta Company, Infantry Training Battalion (ITB), School of Infantry-East (SOI-E), kneels during an accountability drill after completing a 20-kilometer hike at Camp Geiger, North Carolina, Oct. 28, 2013. Delta Company is the first company at ITB with female students as part of a measured, deliberate, and responsible collection of data on the performance of female Marines when executing existing infantry tasks and training events. (U.S. Marine Corps photo by Cpl Anthony Quintanilla, Combat Camera, SOI-E/Released)

**Approved by:**

**August 2015**

A handwritten signature in black ink that reads 'Anita Hattiangadi'.

Anita U. Hattiangadi – Research Team Leader  
Marine Corps Manpower Team  
Resource Analysis Division

## Abstract

The Commandant of the Marine Corps tasked the Ground Combat Element Integrated Task Force (GCE ITF) to train and operate as an integrated combat arms unit to support the development and validation of gender-neutral occupational standards and to assess the effects of gender integration on various measures of readiness and mission success within closed GCE units. In this report, we analyze the GCE ITF Climate Surveys fielded in November 2014, February 2015, and May/June 2015. The surveys inform a variety of issues, with a particular focus on such intangibles as motivations to join the Marine Corps and to volunteer for the GCE ITF, and Marines' attitudes and opinions about integrated units—especially with regard to morale, readiness, and unit cohesion. We supplement our survey data analysis with focus group and structured interview information also collected in May/June 2015.

This page intentionally left blank.

## Executive Summary

The Marine Corps established the Ground Combat Element Integrated Task Force (GCE ITF) to determine whether and how to integrate female Marines into ground combat units and ground combat military occupational specialties (MOSs). In support of the Marine Corps' GCE ITF research, CNA developed and fielded three opinion/climate surveys among GCE ITF volunteers: November 2014 (baseline), February 2015 (posttraining), and May and June 2015 (postassessment). In addition, CNA conducted focus groups with GCE ITF participants (volunteers and leadership) in May and June following the assessment phase.

This report analyzes GCE ITF volunteers' opinions with a focus on how perceptions, attitudes, and opinions changed over time. We address the following issues:

- What are Marine volunteers' initial attitudes and perceptions regarding gender integration, and how do these change over the course of the GCE ITF?
- How did gender integration affect intangible factors, such as unit cohesion, discipline, and morale?
- How did the perception of these intangible factors change over time?

Our survey results are representative of the GCE ITF volunteers but are not necessarily representative of all female Marines and male Marines in GCE units.

## Attitudes regarding gender integration

**Support for women serving in combat roles:** Support for the integration of female Marines into combat roles decreased among both male and female GCE ITF volunteers over time. Throughout the training phase, male volunteers were distributed along the spectrum of support for gender integration, trending toward opposition. Female volunteers almost unanimously supported integration of women into combat roles. After the assessment phase, support trended strongly negative: 61 percent of male volunteers opposed integration. The majority of women (76 percent) were still supportive (with 11 percent strongly supportive): almost 10 percent were opposed, and 15 percent of female volunteers did not support assignment of women to combat roles.

GCE ITF leadership support for gender integration varied, but many noted in the focus groups that they did not see any indication that readiness would improve as a result of gender integration. However, they also anticipated no readiness changes because they believe that few women will be interested and qualified in combat MOSs. The leaders we spoke with indicated that the Marines will implement integration to the best of their ability, though there will be challenges.

**Risk to female security:** Concerns regarding female security decreased during the GCE ITF, especially among men. Initially, male and female volunteers had different opinions of how integration would affect female security: male volunteers predicted increased risk to female safety; female volunteers were not as concerned. In the postassessment survey, there was not a statistically significant difference in the scores of men and women: experience with female Marines led male volunteers to conclude that the risk to women was much lower than their initial assessment.

**Specific concerns of female Marines:** Female volunteers were surveyed about a variety of apprehensions—strength, competence, acceptance—associated with serving in a GCE unit. Most female Marine volunteers felt these were *not* concerns. Issues raised by female volunteers in focus groups included the following:

1. Many women noted that the height and weight standards were developed when female Marines served in administrative positions and that they need to be updated. Female Marines in combat primary MOSs (PMOSs) may need to be larger to successfully complete combat tasks and avoid injury.
2. Many female volunteers commented that their gear did not fit properly, leading to additional wear and tear on their bodies, and potentially slowing them down during assessment events.
3. Volunteers and leadership expressed support for assigning a minimum number of women to a GCE unit to provide mutual/cadre support.

**Recommendations:**

- Update the height and weight standards for female Marines.
- Obtain properly fitting female gear.
- Establish a minimum number of women assigned per GCE unit.

## Perception of unit-level intangible factors

**Combat effectiveness and performance:** From the beginning of the ITF to the end, there was a statistically significant trend among both male and female volunteers predicting decreasing combat effectiveness in integrated units. Male and female volunteers and GCE ITF leadership focus-group feedback noted that MOS-specific

standards for ground combat units would help address combat effectiveness and readiness concerns.

**Unit cohesion, trust, and morale:** Overall, Marine volunteers' perceived that their units were less cohesive in the postassessment phase than they were before. Perceptions regarding morale followed the same pattern. Focus group input indicated that low unit cohesion and morale stemmed from perceptions of favoritism, uneven discipline practices, and gender-based performance differences. Leadership input indicated similar concerns regarding knowing how to best lead and not foster perceptions of favoritism, double standards, or unfair treatment. Volunteers also noted that cohesion and morale suffered when volunteers were separated by gender in the living quarters during part of the assessment phase.

**Recommendations:**

- Develop gender-neutral MOS standards and training.
- Revisit physical fitness test (PFT) and combat fitness test (CFT) standards for men and women in ground combat PMOSs: the Corps should reassess the PFT/CFT for Marines in ground combat PMOSs to ensure that all these Marines are held to the same standards and that the most capable are promoted.
- Provide leadership training highlighting that (1) standards will not change as a result of integration (i.e., established gender-neutral standards will be followed and not compromised), (2) leaders must communicate with and have the same expectations of Marines, regardless of gender, and (3) different Marines are motivated in different ways and by different leadership styles.
- Integrate living quarters in open squad bays and the field.

**Good order and discipline:** GCE ITF participants shared the perception that obedience to orders decreased as a result of female Marines in the unit. More senior female Marines had difficulty taking orders from junior male Marines, and male Marines had difficulty taking direction from female Marines. This perception may have resulted from ITF artificialities (more senior female Marines required to take orders from more junior male Marines, for example) or from different training and acculturation processes for female vice male Marines in ground combat MOSs.

**Recommendation:**

**Begin integrating certain aspects of recruit training:** Early integration has the potential to (1) expose male and female Marines to the same discipline standards, (2) establish a level of gender-integration among all Marine recruits, and (3) expose male and female recruits to male and female Drill Instructors, acclimating all Marines to interactions with senior enlisted male and female Marines.

This page intentionally left blank.

# Contents

<b>Introduction.....</b>	<b>1</b>
Background.....	2
Issues addressed in this report.....	4
Organization of this report.....	6
<b>Methodology.....</b>	<b>7</b>
Analyzing intangibles.....	7
Surveys.....	8
Survey design and administration.....	8
Approach to analyzing survey data.....	9
Survey participation rates.....	9
Inference, survey power and limitations.....	10
GCE ITF volunteers' characteristics.....	11
Volunteers' motivations and expectations.....	11
Other potential sources of bias.....	12
Unit-level comparison limitations.....	13
Focus groups and structured interviews.....	13
Recruitment and participation.....	13
Focus group questions.....	14
Data analysis of focus group discussions.....	15
GCE ITF artificialities.....	15
<b>Marines' Perceptions of Unit-Level Intangible Factors.....</b>	<b>17</b>
Mission focus.....	17
Combat effectiveness.....	17
Performance.....	19
Focus group themes.....	20
Good order and discipline.....	22
Survey results.....	22
Focus group themes.....	24
Implementation issues.....	25
Unit cohesion, trust, and teamwork.....	26
Survey results.....	27

Focus group themes .....	30
Implementation issues.....	33
Morale .....	34
Survey results.....	34
Focus group themes .....	35
Recruiting and retention.....	36
Implementation issues.....	37
Creativity and problem solving .....	38
Focus group themes .....	38
<b>Attitudes Regarding Gender Integration.....</b>	<b>39</b>
Support for women serving in combat roles.....	39
Survey results.....	39
Leadership perspective .....	42
Risk to female security.....	43
Survey results.....	43
Focus group themes .....	44
Male promotion concerns.....	45
Female careers .....	46
Effect of ITF experience .....	46
Ground combat PMOS careers.....	47
Female Marines' physical preparation .....	47
Survey results.....	47
Focus group themes .....	51
Implementation issues.....	53
Living quarters and conditions .....	53
Other concerns of female volunteers.....	54
Survey results.....	54
Focus group themes .....	55
<b>Implementation Issues.....</b>	<b>58</b>
Female interest in ground combat PMOSs .....	58
Survey results.....	58
Female Marines' interest in newly opened MOSs .....	58
Focus group themes .....	60
MOS standards.....	60
Mental and emotional resolve .....	61
Physical performance over time.....	62
“Cultural” challenges.....	63
Favoritism and punitive actions.....	63
Communication and motivation styles .....	64

Leadership issues .....	64
Latmoves .....	65
Relief structure .....	66
Challenges for spouses .....	66
<b>Recommendations .....</b>	<b>68</b>
For integration .....	68
Implement gender-specific MOS-fitness development training .....	68
Provide leadership training .....	68
Begin integrating aspects of recruit training .....	69
Update height and weight standards for female Marines .....	69
Obtain proper-fitting gear for women .....	70
Establish a minimum number of female Marines to be assigned to a GCE unit .....	70
Integrate living quarters .....	70
For the Marine Corps, in general .....	71
Develop gender-neutral MOS standards and training .....	71
Develop training measures to improve mental and emotional resolve .....	71
Revisit PFT and CFT standards for men and women in ground combat PMOSs .....	71
<b>Appendix A: The GCE ITF .....</b>	<b>72</b>
Mission .....	72
Structure .....	74
Personnel .....	74
Subordinate units .....	75
GCE ITF training, exercise, and employment plan .....	77
GCE ITF training period .....	77
Personnel considerations .....	78
Program design .....	79
Assessment phase .....	81
Deployment period .....	82
Locations used .....	82
Battle rhythm .....	82
<b>Appendix B: Survey Delivery Method .....</b>	<b>84</b>
Introductory briefing .....	84
Taking the survey .....	86
<b>Appendix C: Principal Components Analysis .....</b>	<b>87</b>

PCA structure .....	87
PCA of GCE ITF opinions .....	88
Method.....	88
Results .....	88
<b>Appendix D: GCE ITF Volunteers.....</b>	<b>94</b>
Volunteer demographic profile .....	94
Military rank and age.....	94
Physical fitness and marksmanship skills .....	95
Cognitive abilities.....	97
Volunteer attrition .....	98
Marine Corps experiences .....	100
Experience in most recent unit .....	100
Deployments .....	103
<b>Appendix E: Volunteers' Motivations .....</b>	<b>105</b>
GCE ITF participation .....	105
GCE ITF volunteers' hopes and expectations .....	105
Reasons for volunteering .....	106
Joining the Marine Corps.....	107
Summary .....	108
<b>References.....</b>	<b>109</b>

## List of Figures

Figure 1.	GCE ITF Marine volunteers’ perceptions of combat effectiveness, by gender and survey phase <sup>a</sup> .....	18
Figure 2.	Assessment of unit performance by GCE ITF volunteers.....	20
Figure 3.	Assessment of discipline within their unit by GCE ITF volunteers.....	23
Figure 4.	GCE ITF Marine volunteers’ perceptions of task cohesion (posttraining and postassessment surveys).....	28
Figure 5.	Assessment of trust within their unit by GCE ITF volunteers.....	29
Figure 6.	Assessment of teamwork within their unit by GCE ITF volunteers ....	30
Figure 7.	Assessment of morale within their unit by GCE ITF volunteers.....	35
Figure 8.	Marine volunteers’ support for female Marines in combat units, by gender and survey phase <sup>a</sup> .....	40
Figure 9.	Marine volunteers’ perceptions of risks to female Marines, by gender and survey phase <sup>a</sup> .....	43
Figure 10.	Marine volunteers’ perceptions of male Marines’ promotion opportunities under gender integration of ground combat PMOSs and units, by gender and survey phase <sup>a</sup> .....	45
Figure 11.	GCE ITF Marine perceptions of their physical preparedness for the GCE ITF <sup>a</sup> .....	48
Figure 12.	Perception of whether the men in the unit are physically prepared <sup>a</sup> .	49
Figure 13.	Perception of whether the women in the unit are physically prepared <sup>a</sup> .....	50
Figure 14.	Promotional picture of the ASUS laptop/tablets used to collect survey responses .....	84
Figure 15.	Text used to brief GCE ITF participants at the start of each survey session.....	85
Figure 16.	Distribution of PC1 (support of women in combat roles) scores of male and female Marines in the GCE ITF .....	90
Figure 17.	GCE ITF respondents’ paygrade distribution, by gender.....	95
Figure 18.	Rifle and pistol marksmanship categories, by gender <sup>a</sup> .....	97
Figure 19.	Perceived teamwork and morale at previous units, by gender .....	101
Figure 20.	Perceived performance and trust at previous units, by gender.....	102
Figure 21.	Deployments, by deployment opportunity and gender.....	104

This page intentionally left blank.

## List of Tables

Table 1.	GCE ITF climate survey response rates .....	10
Table 2.	Marine volunteer and leadership focus group and interview participation.....	14
Table 3.	Comparison of non-DOR and DOR volunteers' perceptions regarding more likely outcomes associated with gender integration in GCE units .....	41
Table 4.	GCE ITF unit capabilities and missions.....	73
Table 5.	MCOTEA's initially targeted GCE ITF volunteer population, by occupational assignment and gender.....	75
Table 6.	Baseline distribution of GCE ITF Marine volunteers, by subordinate unit and gender .....	76
Table 7.	GCE ITF subordinate unit training days, by training type.....	78
Table 8.	GCE ITF research assessment phase timeline, by unit.....	82
Table 9.	PC1 results .....	89
Table 10.	PC2 results .....	91
Table 11.	PC3 results .....	92
Table 12.	PC4 results .....	93
Table 13.	Percentages of male and female Marine volunteers in each DOR reason category <sup>a</sup> .....	99

This page intentionally left blank.

# Glossary

AAV	Amphibious Assault Vehicle
AFQT	Armed Forces Qualification Test
B	Bridgeport
CASEVAC	Casualty Evacuation
CEF	Combat Support
CFT	Combat Fitness Test
CJCS	Chairman of the Joint Chiefs of Staff
CKF	Fire Direction and Control Specialist
CLF	Combat Vehicle Repair
CMC	Commandant of the Marine Corps
CP	Camp Pendleton
DEP	Delayed Entry Program
DOD	Department of Defense
DOR	Drop on Request
DUI	Driving Under the Influence
EAS	End of Active Service
EID	GCE ITF Identification Number
ETP	Exception to Policy
FITREP	Fitness Report
GCE ITF	Ground Combat Element Integrated Task Force
GT	General Technical
H&S	Headquarters and Support
HQMC	Headquarters Marine Corps
IRB	Institutional Review Board
ITF	Integrated Task Force
LAAD	Low Altitude Air Defense
LAR	Light Armored Reconnaissance

Latmove	Lateral Move
LAV	Light Armored Vehicle
MCFIP	Marine Corps Force Integration Plan
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MCRD	Marine Corps Recruit Depot
MCTFS	Marine Corps Total Force System
MOS	Military Occupational Specialty
ND	Negligent Discharge
NCO	Noncommissioned Officer
NHRC	Naval Health Research Center
NJP	Nonjudicial Punishment
OIF	Operation Iraqi Freedom
PAGEQ	Physical Activity Group Environment Questionnaire
PCA	Principal Components Analysis
PCS	Permanent Change of Station
PEF	Program Enlisted For
PFT	Physical Fitness Test
PI	Provisional Infantry
PMOS	Primary Military Occupational Specialty
POW	Prisoner of War
PT	Physical Training
RECC	Reserve End-of-Current Contract
SAPR	Sexual Assault Prevention and Response
SecDef	Secretary of Defense
SMCR	Selected Marine Corps Reserve
SNCO	Staff Noncommissioned Officer
TEEP	Training, Exercise, and Employment Plan
T&R	Training and Readiness
UDP	Unit Deployment Program
USSOCOM	U.S. Special Operations Command
YOS	Years of Service

# Introduction

In January 2013, when the Secretary of Defense (SecDef) rescinded the 1994 Direct Ground Combat Definition and Assignment Rule [1], the service secretaries and chiefs became responsible for opening combat arms opportunities to women and justifying any military occupational specialties (MOSs) or billets that are to be closed to them by January 2, 2016 [2]. In response to the SecDef's actions, the Marine Corps developed the Marine Corps Force Integration Plan (MCFIP) to support the establishment and validation of gender-neutral occupational standards as part of its efforts to expand the ground combat occupational and assignment opportunities available to female Marines [3] and to assess the effects of gender integration on various measures of readiness and mission success within closed GCE units.

A key line of effort for MCFIP was the creation of a Ground Combat Element (GCE) Integrated Task Force (ITF) consisting of male and female Marine volunteers. Some female Marine volunteers were trained in combat arms MOSs; others were assigned to the unit in their original non-combat-arms MOSs, but in a provisional infantry role. The Commandant of the Marine Corps (CMC) directed the GCE ITF to train and operate as an integrated combat arms unit.<sup>1</sup> Dedicated research teams observed the unit's training and performance in an operational-deployment-like environment [4].<sup>2</sup>

According to the CMC's direction, supporting research efforts included the following:

- Developing and fielding a climate survey to Marine volunteers
- Conducting focus groups and interviews
- Observing and analyzing performance data from field operations
- Performing physiological testing

---

<sup>1</sup> We describe the GCE ITF—its structure and function, the training program, and the components of the assessment phase—in Appendix A.

<sup>2</sup> The MCFIP included four levels of effort: (1) expanded assignment of female Marines in previously open MOSs to ground combat units implanted by the Manpower Management Division, Headquarters Marine Corps, Manpower and Reserve Affairs, (2) expanded entry-level training research studies conducted by the Training and Education Command, (3) the GCE ITF, and (4) early opening of select, previously closed, ground combat MOSs to women (see [4] for more details regarding the overall MCFIP).

The combined results of these separate research efforts will serve to inform Marine Corps leadership's gender integration policy decisions.

The focus of our research was the development, administration, and analysis of the climate surveys, focus groups, and interviews with GCE ITF Marine volunteers and staff. In this report, we analyze the responses and opinions expressed through these instruments and discussions. These data reflect Marine volunteers' experiences and opinions over the course of the GCE ITF regarding (a) mission focus and performance, (b) discipline, morale, and unit cohesion, and (c) the perceived trade-offs of integrating women into combat units and occupations. Focus groups and interviews supplement the climate survey results.

## Background

In 1993, Congress repealed the statutory restrictions on the assignment of women in the armed services and delegated the responsibility for determining assignment policy for women to combat units and positions to the SecDef and the service secretaries [5]. At the same time, Congress required the SecDef and the service secretaries to notify it of any policy changes to open or close the assignment of women to combat units. In response, on January 13, 1994, the SecDef issued the Direct Ground Combat Definition and Assignment Rule [6]. Effective as policy on October 1, 1994, the SecDef memorandum noted:

Service members are eligible to be assigned to all positions for which they are qualified, except that women shall be excluded from assignments to units below the brigade level<sup>3</sup> whose primary mission is to engage in direct combat on the ground as defined.... [6]

The memorandum defined direct ground combat as

engaging an enemy on the ground with individual or crew served weapons, while being exposed to hostile fire and to a high probability of direct physical contact with the hostile force's personnel. [6]

The 1994 Direct Ground Combat Definition and Assignment rule remained Department of Defense (DOD) policy until 2012. In February 2012, DOD notified Congress that the SecDef had

---

<sup>3</sup> The Army brigade is equivalent to the Marine Corps regiment.

approved an exception to the 1994 policy that would allow the United States Army, the United States Marine Corps, and the United States Navy to open positions at the **battalion** level of direct ground combat units, in select occupational specialties currently open to women. [7]

In addition, DOD notified Congress that it was rescinding the restriction of female assignments to units that are collocated with ground combat units [7]. Less than one year later, in January 2013, the SecDef rescinded the 1994 Direct Ground Combat Definition and Assignment Rule, opening the assignment of women to previously closed occupations and units [1]. Nearly concurrent with the SecDef's announcement, the Chairman of the Joint Chiefs of Staff (CJCS) promulgated guiding principles and a phased approach to implementing the change [2]. These guiding principles follow:

- Ensuring the success of our Nation's warfighting forces by preserving unit readiness, cohesion, and morale
- Ensuring all Service men and women are given the opportunity to succeed and are set up for success with viable career paths
- Retaining the trust and confidence of the American people to defend this nation by promoting policies that maintain the best quality and most qualified people
- Validating occupational performance standards, both physical and mental, for all military occupational specialties (MOSS), specifically those that remain closed to women...For occupational specialties open to women, the occupation performance standards must be gender-neutral as required by Public Law 103-160, Section 542 (1993)
- Ensuring that a sufficient cadre of midgrade/senior women enlisted and officers are assigned to commands at the point of introduction to ensure success in the long run.... [2]

The CJCS memo set specific goals and milestones for the services to meet to support the "elimination of unnecessary gender-based barriers to service" [2]. Among these goals and milestones, the CJCS memo directs the following:

Services will continue to develop, review, and validate individual occupational standards. Validated gender-neutral occupational standards will be used to assess and assign Service members not later than September 2015.

The Service and U.S. Special Operations Command (USSOCOM) will proceed in a deliberate, measured, and responsible way to assign

women to currently closed MOSs as physical standards and operation assessments are completed and it becomes possible to introduce cadres....The Service and USSOCOM must complete all studies by first quarter, FY 2016, and provide periodic updates each quarter beginning in third quarter, FY 2013.

If we find the assignment of women to a specific position or occupational specialty is in conflict with our stated principles, we will request an exception to policy. [2]

The joint CJCS and SecDef memo notes that exception to policy (ETP) requests must be approved by each of them. In addition, ETP requests are to be narrowly defined and based on “rigorous analysis of factual data regarding the knowledge, skills, and abilities needed for the position” [1].

## Issues addressed in this report

The GCE ITF is designed to provide insights to two key questions facing Marine Corps leadership:

1. *Whether to request an ETP.* The Marine Corps leadership must determine if there is a military readiness justification “based on rigorous analysis of factual data” to request an ETP.
2. *How to implement gender integration in ground combat units.* Taking into account any ETP that the Marine Corps may request and be granted, Marine Corps leadership must determine how to efficiently and effectively implement gender integration in ground combat units.

The GCE ITF Marines’ experiences, feedback, and insights provided via the climate surveys, focus groups, and interviews may contribute to the Marine Corps’ decision of whether to request an ETP and will inform how the Marine Corps’ implements DOD’s policy to gender integrate combat units and occupations.

In this report, we analyze and compare GCE ITF climate survey responses over time for insights into intangible factors associated with mission success that may be influenced by gender integration in combat units and MOSs. The CNA study team offered all GCE ITF Marine volunteers who remained assigned to the unit the opportunity to participate in the climate survey each of the three times that it was administered. In addition, the CNA study team conducted focus groups and structured interviews with GCE ITF volunteers and assigned staff members following their return to Camp Lejeune from the operational performance research phases conducted at Twentynine Palms, Bridgeport, and Camp Pendleton.

Our analysis of GCE ITF Marines' opinions and perceptions about gender integration and their ITF experiences inform a variety of issues that cannot be measured in other ways, particularly in terms of intangible factors. Our analysis also includes a time component and assesses how Marines' survey responses change over their 8- to 10-month ITF assignment. The questions and topics we address in this report follow:

- What are male and female Marine volunteers' initial attitudes and perceptions regarding gender integration?
  - Do Marine volunteers' attitudes and perceptions regarding gender integration change over the course of the GCE ITF? If so, how?
- How did gender integration affect unit cohesion, teamwork, and discipline?
  - How cohesive did male and female Marines feel their GCE ITF unit was throughout the duration of the task force?
  - How cohesive did commanders/sergeants major and other unit leaders feel their unit was?
- How did Marine volunteers assess their own and their peers' physical abilities?
  - Did female Marine volunteers feel that they had the physical abilities to meet the requirements of their GCE ITF positions?
  - Did male Marine volunteers feel that the female Marine volunteers had the physical abilities to meet the requirements of their GCE ITF positions?
  - If yes, how so? If no, how not?
- What are Marine volunteers' military career plans?
  - What factors are most important to volunteers with regard to their military career plans?
  - Is gender integration a top factor? Do findings/patterns change over the course of the GCE ITF? If so, how?

GCE ITF volunteers had the option to drop on request (DOR) from the research at any time and for any reason. Their participation also could be terminated due to injury or other compelling reasons. Our analysis compares survey responses to the baseline survey between Marine volunteers who remained in the ITF and responded to the posttraining and postassessment surveys with those who DORed or had their participation terminated. We also compare the characteristics of these two groups of Marines.

## Organization of this report

In this report, we analyze the data that we collected via GCE ITF climate surveys, focus groups, and interviews during the GCE ITF's formation, in the training phase, and following the performance assessment phase. Our analysis determines whether gender integration affected intangible factors in the unit, such as morale and unit cohesion, and presents Marines' perspectives on the challenges, advantages, and trade-offs associated with assigning women to ground combat units and MOSs.

In the first section, we explain our methodology for collecting and analyzing the survey data on intangible factors and perceived trade-offs, as well as for the focus groups and interviews.

The second section analyzes how intangible group-level factors changed over time in the GCE ITF following the training program and the assessment phase. First, we define each intangible factor; then, we analyze how Marine volunteers' perceptions and opinions changed during each research phase. For each phase, we look for changes while considering the effect of attrition within the unit; when Marines dropped out, they took their opinions with them and there was potential for that attrition to change perceptions of the group without changing individual Marine's perceptions. We also provide synopses of GCE ITF Marines' insights and feedback from the focus groups and structured interviews. We highlight issues and recommended mitigations the Marine Corps may choose to adopt as it implements gender integration in ground combat units and occupations in accordance with policy and taking into account any ETP provisions.

Third, we look at the individual-level perceptions of intangible issues associated with integrating women into combat units and MOSs, primarily in terms of tradeoffs—what is lost and what is gained from integrating or not integrating female Marines.

We follow with a discussion that highlights specific gender integration implementation issues and potential solutions.

Finally, we conclude with our recommendations.

# Methodology

## Analyzing intangibles

The potential advantages and disadvantages of integrating women into combat MOSs and units are diverse [8-10]. One approach to analyzing the possible benefits and drawbacks is to distinguish between tangible and intangible factors. Examples of tangible factors include logistical requirements, whether members of the unit have the strength to perform specific tasks, and promotion rate changes. Tangible factors are relatively easy to define and measure, although collecting data on them may be a challenge.

Intangible factors are difficult to measure and often escape precise definition. For this analysis, we group intangible factors into those that apply to the individual, such as attitude, perception, enthusiasm, or motivation, and those that apply to a group, such as unit cohesion or operational momentum. The distinction is not clear-cut, however, because certain factors, such as morale, apply to both an individual and a group and because certain individual factors, such as perceptions, both contribute to and are highly dependent on the mix of opinions within a group and the backgrounds and biases of its members.

There are some indirect metrics to assess intangible factors. For example, the number of nonjudicial punishments (NJPs) can be symptomatic of poor discipline or morale. But indirect methods are usually based on episodic events that require a long time period for comparison. The established method to measure and analyze intangible factors, at a particular point in time, is using opinion or climate surveys—with specific results informed by focus groups and structured interviews. For this study, we employed three data collection methods: surveys, focus groups, and structured interviews.

In each case, we asked GCE ITF Marine volunteers and leadership for their perceptions regarding traits of their unit, element, or group. We did not define the term *unit* (or *element* or *group*) but rather allowed participants to interpret the concepts for themselves. There were never questions from volunteers or leadership regarding what unit or group we meant, reinforcing our assumption that the term *unit* was a natural construct for them.

## Surveys

### Survey design and administration

CNA developed three surveys for GCE ITF Marine volunteers fielded at distinct times:<sup>4</sup>

- A baseline survey fielded in November 2014, by which time nearly all GCE ITF Marine volunteers had reported to the unit at Camp Lejeune (baseline survey)
- A predeployment survey fielded in February 2015, following the training phase but before the Marine volunteers departed for the assessment phase (referred to as the posttraining survey)
- A final survey following completion of the assessment phase and the Marine volunteers' return to Camp Lejeune in May and June 2015 (referred to as the postassessment survey)

The climate surveys collect information throughout the course of the GCE ITF on volunteers' motivations, attitudes, perceptions, and opinions with regard to gender integration and associated concerns, unit readiness, cohesion, morale, motivation to volunteer for the GCE ITF, intention to reenlist, and the development of physical occupational standards. We use the three surveys to assess changes in Marines' attitudes and opinions about gender integration in the GCE ITF and their perceptions of gender integration's effects on readiness, unit cohesion, and morale. The survey effort was not intended to facilitate course corrections or changes in GCE ITF's execution but rather to gauge Marine volunteers' attitudes and experiences over time and to compare responses over time to detect any changes that may have occurred over the course of Marine volunteers' ITF experiences.

The baseline survey included questions regarding volunteers' motivations to join the GCE ITF; the posttraining and postassessment surveys include questions to assess their GCE ITF experiences that were not in the baseline survey. Volume 2, the data collection annex to this report, contains all three climate surveys. We describe the standardized method that we developed to administer the surveys in Appendix B.

---

<sup>4</sup> Volunteers included those Marines who specifically volunteered to participate in the GCE ITF in that capacity. In Appendix A, we specify the qualifications that Marines had to meet to qualify to be eligible to volunteer to participate in the GCE ITF. MCOTEA's research protocol [11] provides detailed information regarding how the Marine Corps defined volunteers, the qualifications Marines had to meet to be eligible to volunteer to participate in the GCE ITF, and the GCE ITF recruiting and volunteer selection process.

## Approach to analyzing survey data

In general, we apply standard descriptive and inferential statistics to analyze the GCE ITF survey data. We describe survey responses using mean values or proportions, followed by a gender-based comparison and sometimes a break-out by subordinate unit. We note when male and female volunteers' response patterns were different and if the differences were statistically significant—that is, if the differences were greater than those expected by chance. In addition, we follow the Bureau of Census data rules for reporting summary statistics on small populations, including the rule that no summary statistics are reported for groups of fewer than five individuals.

Most survey questions were closed-ended with check-box selections or multiple-choice options. For some questions, we included a free-text field in which respondents could type in their own responses. We reviewed and analyzed these write-in responses and, when appropriate, incorporated them into existing response categories; otherwise, we created a new category. In addition, participants had the opportunity to provide an overall free-text commentary on the GCE ITF.

When a large number of responses were collected on a particular topic, we used a statistical technique called principal components analysis (PCA). PCA reduces large numbers of responses to a smaller set of independent component responses that capture the variability of opinion in the surveyed group, but each component requires interpretation. Using this higher order analysis, we are able to identify patterns in intangible properties of the unit through the variety of responses—at times capturing themes of the surveyed population's attitudes, opinions, and perceptions. We describe the PCA method in Appendix C.

## Survey participation rates

Overall participation rates (see Table 1) ranged from a high of 95 percent for the baseline survey to 76 percent for the postassessment survey—very high rates compared with other equivalent surveys, which are usually web or mail based [12]. These also are high Marine Corps survey response rates.<sup>5</sup> Our high survey response rates are partly a result of the GCE ITF S-3 (operations) staff's efforts to ensure that all Marine volunteers reported at a scheduled day and time to a classroom environment to have an opportunity to take each survey. To further encourage participation, the room environment was secure and monitored only by CNA study

---

<sup>5</sup> For example, the overall response rate to the Marine Corps' Women In Service Restrictions Review Survey fielded electronically in 2012 was 23 percent, with enlisted Marines having the lowest response rates [13].

team members and an enlisted Marine Corps research monitor. In the survey session, each volunteer had the opportunity to take the survey or decline participation without any command influence.

Some participation was likely explained by Marine volunteers’ motivation and interest in the topic. High voluntary survey participation also may serve as a measure of shared purpose and mission. A key to high participation rates is that participants believe that their responses or the analysis from their responses are required to improve a process or product [14-15]. The belief that responses will be used, along with some of the comments we saw in the free-text portions of the survey, suggests that Marine volunteers believe that their participation in the GCE ITF will assist Marine Corps leadership in its assessment of gender integration in combat roles.

Participation by individuals in the room remained high throughout the GCE ITF. However, the number and proportion of Marine volunteers taking the survey decreased over time as DORs increased and the research-related responsibilities of GCE ITF volunteers increased.

Table 1. GCE ITF climate survey response rates

Response category	Baseline survey		Posttraining survey		Postassessment survey	
	Men	Women	Men	Women	Men	Women
Total who reported to take the survey	278	94	191	78	139	56
Number who took the survey	260 (95%)	90 (96%)	170 (89%)	72 (92%)	132 (95%)	51 (91%)
Eligible population	278	94	206	81	174	71
Overall participation rate	95%		84%		76%	

Source: CNA tabulations based on survey participation roster data.

## Inference, survey power and limitations

Intangible factors, such as unit cohesion and peer effects, are difficult topics to quantitatively analyze because the Marine Corps does not have established objective measures of these characteristics. Yet, military literature contends that they are important group properties that significantly affect combat effectiveness (e.g., see Marshall [16], Shils and Janowitz [17], Henderson [18], and Siebold [19]). In data-driven research, analysts draw conclusions about a large system or organization either by focusing on a small part of the system (or a subset of all the data possible to be collected from the overall system) or by studying similar systems. Study

conclusions have inference or applicability to the larger overall system only if the units-of-study are representative of the larger system. Statistical inference—the conclusion that statistics from a sample are valid to a larger system—usually depends on randomized sampling to ensure the data are representative.

## GCE ITF volunteers' characteristics

Because of the GCE ITF's design, the unit had a denser concentration of women than the rest of the Marine Corps. For the baseline, posttraining, and postassessment surveys, the respective gender distribution of responses was 74, 70, and 72 percent male and 24, 30, and 28 percent female. In comparison, the overall gender distribution of enlisted Marines is approximately 93 percent men and 7 percent women. Consequently, we note that the GCE ITF Marine volunteers are not necessarily representative of the Marine Corps enlisted population in terms of the gender distribution of male enlisted junior Marines and NCOs.

In Appendix D, we examine the demographic characteristics, DOR behavior, and military experience of male and female GCE ITF Marine volunteers and how these characteristics differ by gender. When possible, we also compare the characteristics of the survey participants to the GCE population in the Marine Corps to gain a better understanding of how these populations are overrepresented or underrepresented among the survey respondents. We compare female Marine volunteers to their counterparts in the Corps; we cannot compare female Marine volunteers to their fleet counterparts because there were no women in ground combat MOSS in GCE units during this time period.

We found that the male and female GCE ITF volunteer populations differed somewhat from each other and from their Marine Corps counterparts in terms of demographics, ability, and experience measures; however, these differences are not large. We also found statistically significant demographic differences by paygrade, cognitive ability, and deployment experience in Marines who chose to DOR compared with those who did not. In our analysis, we keep in mind that response differences in both the male and female populations might not completely be explained by underlying gender differences, but could be a result of the varying backgrounds of male and female GCE ITF volunteers. In addition, the profile of those who chose to attrite throughout the ITF process could potentially shape changes in the volunteer population and their later survey responses. When possible, we account for this potential source of bias.

## Volunteers' motivations and expectations

A key difference between GCE ITF Marines and their counterparts in the Marine Corps is that the GCE ITF Marines volunteered for the assignment and their

counterparts did not. We included questions in the baseline survey to assess potential motivational biases. By and large, volunteers survey responses indicated that they were motivated to join the GCE ITF because they wanted to be involved in an important time in Marine Corps history, to find out how the ITF was being conducted, to be sure that the “right” decisions would be made, and to ensure that ground combat units are composed of qualified Marines (see Appendix E). We also saw some indication that those who were more motivated to join the ITF because they did not want women to succeed in combat roles were more likely to DOR throughout the course of the ITF.

To the extent that survey responses may be correlated with volunteers’ motivations and willingness to participate in the ITF, we can expect opinion differences between the ITF members and their peers throughout the Marine Corps. Although the answers to those questions will give us some idea of the magnitude and type of selection bias, we will not be able to generalize our survey results to the overall enlisted Marine Corps population. To the extent that we obtained a high response rate for each survey, the responses are representative of the GCE ITF Marine volunteers. The data do provide information that suggests potential challenges and changes in Marines’ viewpoints on gender integration that Marine Corps leaders may face as the Corps continues its gender integration of ground combat element units.

## Other potential sources of bias

One concern in opinion surveys is that a sizable minority—or a majority—of the target population declines to take the survey specifically because people have opinions that they do not wish to share [20]. Survey analysis methods assume that the nonrespondents’ opinions are randomly distributed in the population [21]. If there is self-selection, the survey results are not representative of the population as a whole, even if a majority takes the survey. Because our response rates are high for each of the GCE ITF climate surveys, we may infer that the survey responses are representative of the GCE ITF volunteers and whatever biases they may have regarding support for or opposition to women in combat units; however, they are not necessarily representative of Marines across the Marine Corps.

Our results are susceptible to actual survey item response bias: We cannot determine if a large proportion of Marine volunteers participating in the survey chose to provide responses that do not reflect their actual opinions, and we cannot know how misrepresentation affects our findings. But this concern is true of all opinion surveys. That said, the diversity of responses is evidence many participants did not have reservations in expressing their opinions. In addition, large numbers did respond with neutral sentiments that could be symptomatic of true neutrality or disinterest. We cannot identify analytically which of the two sentiments applies to a particular Marine.

## Unit-level comparison limitations

However, we cannot assume that GCE ITF units (e.g., Tanks or Mortars at the platoon level) are representative of equivalent units in the USMC. Further, we do not have many of these units; we have one of each. Conclusions drawn about company- or platoon-level properties, therefore, cannot have inference to the larger operating forces of the USMC. For example, if the integrated Mortar platoon had high morale and the integrated Tank platoon had high unit cohesion, we could not—based on these single observations—logically conclude that all or most Tank or Mortar platoons would have high unit cohesion or morale if integrated; nor could we assume that an integrated Mortar platoon would have higher morale than an integrated tank platoon.

Since unit-level comparisons and conclusions do not have inference to USMC-wide decisions, we do not report them in this analysis.

## Focus groups and structured interviews

### Recruitment and participation

The CNA study team conducted focus groups and structured interviews with volunteers, direct assignments in Company and Platoon-level leadership positions, and ITF senior leadership at Camp Lejeune during the final data collection periods in May and June 2015. During introductory comments of each survey administration session, the CNA study team informed GCE ITF Marine volunteers of the opportunity to participate in the focus groups and invited Marine volunteers to stay after completing the survey and participate in the focus groups. Those who did not wish to participate in the focus groups were free to leave.

To put volunteers at ease in sharing their thoughts and feelings about their ITF experiences, we conducted focus groups separately by gender: male CNA facilitators conducted the male focus groups, and female CNA facilitators conducted the female focus groups. No unit leadership was present at the volunteers' focus groups.

The CNA team spoke to volunteers and leadership from all GCE ITF subordinate units. We show the number of focus group participants by category in Table 2. Both men and women from all units volunteered to participate, with the exception of women from Tank Platoon—for which there were no volunteers to participate. The CNA team also conducted separate structured interviews with Marines who were directly assigned to GCE ITF leadership billets; these included ITF leadership at the headquarters, company, and platoon levels, and with the ITF research monitors.

Table 2. Marine volunteer and leadership focus group and interview participation

Participant category	Number of participants
Male volunteers	121
Female volunteers	45
Leadership	74

At the beginning of each focus group, the CNA facilitators introduced and read through the informed consent form. Participants were encouraged to ask questions about the process. The CNA facilitator emphasized that participation was voluntary and that there was no consequence to not participating. Those interested in participating were asked to read and sign the consent form. Those who consented to participate in the focus group were offered copies of their respective signed consent forms. Those who were not interested or who did not consent were allowed to leave.

Focus group discussions were recorded in written format as well as audio recorded. Any audio recordings have been transcribed, excluding any personally identifiable information, and the recordings themselves have been deleted.

## Focus group questions

The CNA facilitator asked general questions to guide the focus group discussions.<sup>6</sup> The questions asked about the volunteers' experiences as part of the ITF, thoughts on their Marine Corps career, challenges encountered during the ITF, and thoughts regarding integration going forward.

Facilitators started discussions with the guidance and general questions, and endeavored to steer conversations to keep them relevant to the issues and intangible properties of the units represented in the structured interview or focus group. However, participants were not prohibited from raising their own questions, and interviews and facilitators would ask follow-up questions or request clarification.

In general, ITF volunteers and leadership were asked for their input on the following topics:

- Challenges related to integration encountered during participation in the ITF
- How the challenges were addressed and solved
- Physical demands encountered and how they were met

<sup>6</sup> We provide a copy of the facilitator's guide for the male volunteer, female volunteer, and leadership focus groups and structured interviews in volume 2 of this report.

- Specific gender-based challenges faced by the unit while in the field and while in garrison
- Impact of integration on unit cohesion, morale, and readiness
- Impact of ITF experience on career goals in the service
- Lessons learned and recommendations as integration moves forward

The insights of the ITF volunteers and leadership on these particular topics are important in developing a comprehensive understanding of the challenges faced in the ITF.

## Data analysis of focus group discussions

During discussions, focus group facilitators took notes, which were transcribed into a standardized spreadsheet. Each comment was coded with the focus group and was annotated with appropriate subject topics.

From the focus group data, we identified overall themes and issues consistently heard from ITF volunteers and leadership. We have incorporated the focus group and structured interview thematic information into our survey analysis to highlight and clarify survey response findings. When appropriate, we highlight unique challenges faced by various units.

Each population of volunteers, direct assignments, and senior leadership had many participants who we presume capture the tone and diversity of opinions in the Marine Corps. Conclusions based on the analysis of the focus group and structured interview participants' perspectives and opinions are assumed to have some inference to the Marine Corps' operating forces.

## GCE ITF artificialities

The GCE ITF assessment was designed to estimate the effects of gender integration by assessing volunteers performing discrete tasking coupled with the simulation of real-world operational events (e.g., ground attacks). Focus group feedback from Marine volunteers and leadership noted that this approach introduced research artificialities to the GCE ITF, which included the following:

- Throughout the assessment, the repetition of trial training tasks for all MOSs was not realistic. For example, the PMOS-0331 Marine volunteer and Provisional Machine Gunner assessment consisted of 2-day trials (offensive/defensive) for 21 record test cycles. Focus group feedback indicated that the repetitive nature of the assessment decreased the level of interest and

morale among some participants, particularly male volunteers who knew from experience that the repetitive nature of the tasks did not reflect operating force operations.

- Random assignment and rotation of Marines through every billet within a unit or section was not realistic. It is not common for Marines in combat MOSs to rotate in billets other than the billet to which assigned. In addition, in some instances, Marines were asked during the assessment phase to perform an individual task within a given billet that was not actually a task that would be performed by a Marine in that billet. One example offered in the focus group discussions referenced the Light Armored Reconnaissance (LAR) cycle in which Marines would rotate through the role of gunner and driver on the vehicle.
- Gaps existed between female Marine volunteers' ranks, their MOS credibility, and ITF positions. Because female Marine volunteers had just completed the MOS training for the ITF, they were "assigned" to billets of lower experience (and rank), while male Marine volunteers with experience in their MOS were in billets requiring more experience, although their rank might not match the billet. Gaps between MOS credibility and rank created morale, discipline, and cohesion issues. In most line units, rank and billet position are closely correlated, and the small unit leadership problems that occurred because of gaps between MOS credibility and rank would occur less frequently.
- The average GCE ITF training day was shorter than would occur in the operating forces. Mandatory rest periods, regular showering opportunities, and meals did not reflect typical living conditions during operating force workups and operations. Leadership feedback in interviews noted that some units went up to 6 consecutive days without performing any training-related tasks.
- Operating force Marines cannot DOR. Company- and platoon-level leaders were perplexed by the DOR aspect of the GCE ITF and whether DORs might introduce bias to the data collection effort and final analysis. Leadership felt that Marines DORed simply because they could. DORs do not exist in the operating force and were detrimental to the GCE ITF's mission.
- There was concern among company and platoon leadership regarding the quality of male Marine volunteers. Some felt that the male Marine volunteers randomly selected for participation in the GCE ITF were skewed toward being lower quality in terms of fitness levels and experience.<sup>7</sup>

---

<sup>7</sup> As noted earlier in this section, we compared volunteer characteristics with their counterparts in the Marine Corps. These comparisons are discussed in Appendix D.

# Marines' Perceptions of Unit-Level Intangible Factors

In this section, we address perceptions by members of the GCE ITF of unit-level measures: mission focus, order, cohesion, morale, and problem-solving. For each, we define the concepts—understanding that they are intangible factors—and then report our analysis of survey responses and focus group/structured interview discussion questions.

## Mission focus<sup>8</sup>

Combat effectiveness is a tangible property of a military force only when it is tested in battle [22]; until that time, it is an intangible factor that is evaluated using military judgment. We asked volunteers, direct assignments, and unit leadership to use their operational experience to discuss and assess the combat effectiveness and mission performance of their GCE ITF unit.<sup>9</sup>

A unit's mission is its assigned task, along with the purpose of that task [23]. We asked Marine volunteers about their perceptions regarding the ability of an integrated unit to focus on the unit task and purpose, how well they performed those tasks, and how effective they might be in combat.

## Combat effectiveness

Survey respondents answered questions regarding potential outcomes of assigning female Marines to combat units or ground PMOSs. We used principal components analysis (PCA) to determine independent themes among volunteers' responses to

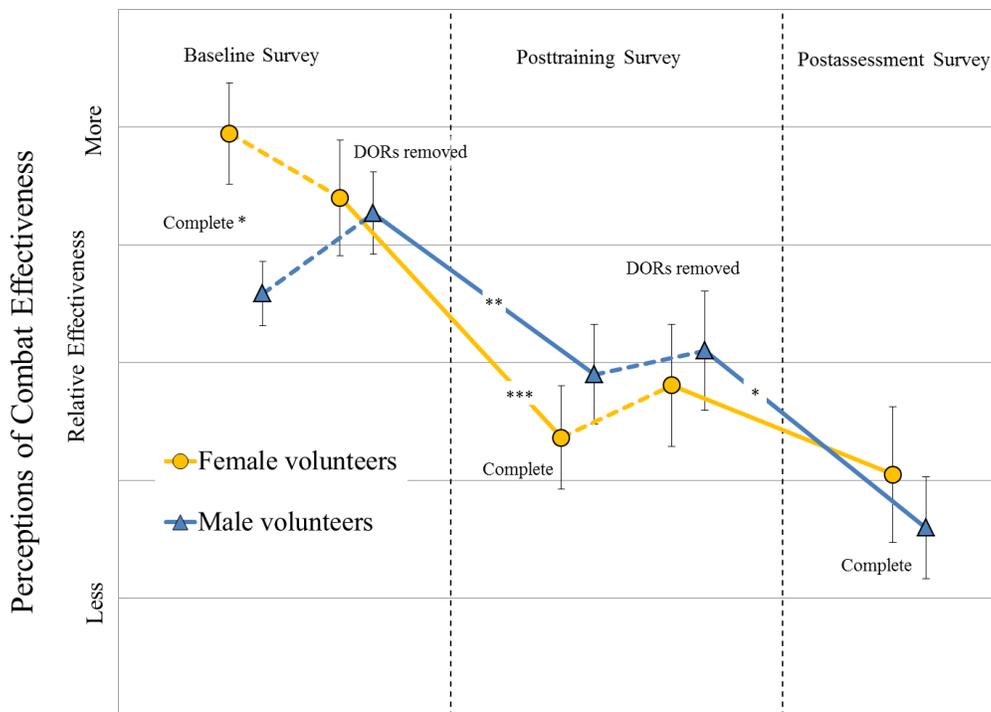
---

<sup>8</sup> See Appendix A for a description of the GCE ITF, including its mission.

<sup>9</sup> We include information regarding volunteers' self-reported deployment experiences in Appendix D. However, we note that operational experience does not necessarily imply combat experience, and we had no objective means to determine if a GCE ITF volunteer had combat experience.

these questions (see Appendix C). The second principal component (PC2) reflected an assessment of “combat effectiveness”; Marines who scored high on this component responded that having women assigned to combat units or PMOSs would lead to *more* unit cohesion, fewer casualties, and greater combat effectiveness (see Figure 1). This perception of overall combat effectiveness was independent of whether the respondent supported female assignment to these roles, and it may be a better measure than simply using the response to “combat effectiveness” since few of these Marines had experienced combat.

Figure 1. GCE ITF Marine volunteers’ perceptions of combat effectiveness, by gender and survey phase<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

<sup>a</sup>. We describe the PCA method, the survey items that load on the combat effectiveness component, and our PCA results in Appendix C.

In Figure 1, we show average female scores and trends in yellow and male scores and trends in blue. We provide two sets of scores for each survey: a score labeled “complete,” which includes all responses, and a score labeled “DORs removed,” which excludes the responses of female and male Marines who DORed during the training and during the assessment phases.

In the baseline survey, both gender responses were optimistic that the units would be more combat effective. Female volunteers' average scores were higher than male volunteers' average scores. Attrition during the training phase was more common for men with lower scores and for some women at the high end tail. After accounting for attrition, the individuals who stayed in the GCE ITF through the end of the training phase had almost identical high initial scores.

In the posttraining survey, men had lost confidence that assignment of women to units would improve combat effectiveness, and there was greater variance. Both average male and average female scores dropped significantly.

In the postassessment survey, male and female scores for predicted combat effectiveness decreased further: men were more pessimistic, but the average female score was also low. From start to finish, there was a statistically significant trend for decreasing predictions for combat effectiveness of integrated units among both men and women. Women led this trend following the training phase, suggesting that female volunteers may have had an early impression that their performance was not at the same level as their male volunteer peers.

## Performance

Compared with their previous unit, the average assessment of GCE ITF unit performance<sup>10</sup> by female volunteers was higher (see Figure 2); the male volunteers assessed that it was significantly lower than what they had seen in previous units. Following the assessment phase, the female volunteer assessment of performance was lower than in the posttraining survey; again, this was not statistically distinguishable from their previous assessment. Male volunteers, however, judged that the unit was not performing as well in the assessment phase as in the training phase and, again, this decrease in perceived performance was statistically significant.

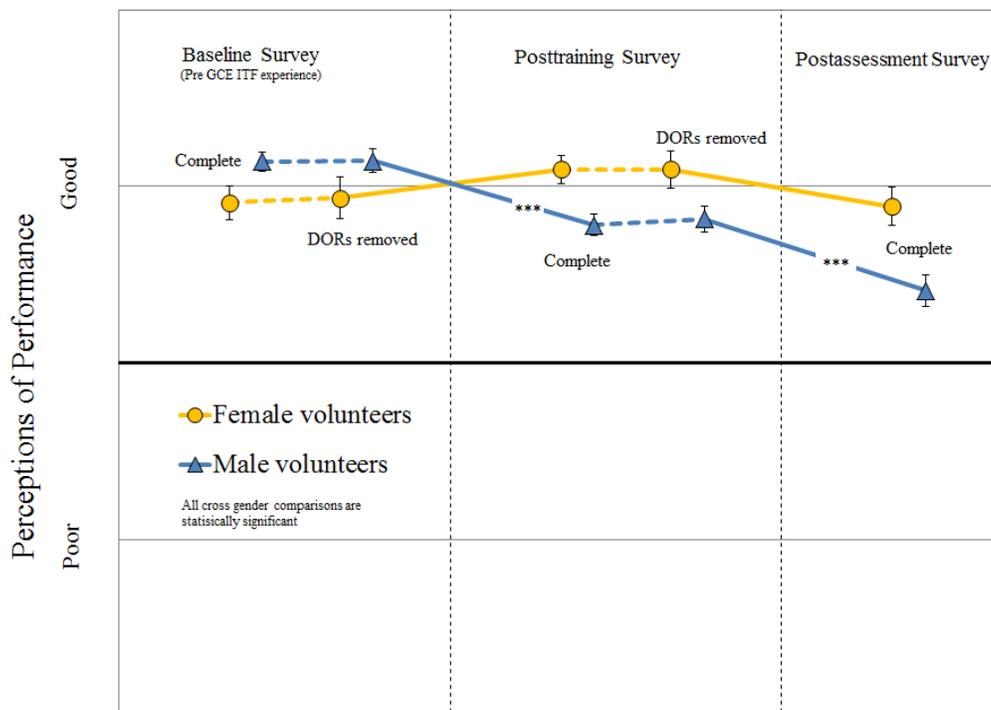
A proportion of volunteers, both male (34 percent) and female (43 percent), attributed their good performance during training to the presence of female Marines in the unit. At the end of the training phase, 6 percent of male volunteers thought that their unit was performing poorly, and most of these (9 of 11 Marines) attributed that poor performance to the presence of women; none of the female volunteers thought their unit was performing poorly. Eleven percent of male volunteers and 3 percent of female volunteers thought that the unit was performing well but that it could be performing better without female volunteers.

---

<sup>10</sup> We did not define the terms *unit* or *performance* in the survey document; however, no Marine asked for clarification during survey administration, indicating that the concepts were understood by volunteers.

Following the assessment phase, the tone shifted: 13 percent of male volunteers thought that the presence of women in the unit improved performance (down from 34 percent). The number of female volunteers who thought they improved performance also had fallen from 43 to 26 percent. The proportion of male volunteers who thought that the unit was performing poorly and that women had degraded performance almost tripled from 6 to 17 percent, and the total proportion of male volunteers who thought that women degraded unit performance during assessment was 62 percent. In comparison, 2 percent of female volunteers thought that unit performance was poor, but 25 percent said that the presence of women had degraded their unit's performance levels.

Figure 2. Assessment of unit performance by GCE ITF volunteers



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

## Focus group themes

During the focus groups, male volunteers expressed concerns about the combat effectiveness of an integrated unit because of the belief that women cannot endure the physical and psychological stress of deployment over time. These volunteers felt that women were never tested under the real strains of deployment, which involve

multiday continuous operations under more difficult conditions. Some male volunteers noted that the longest events in the ITF were shorter and less intense than normal work-ups, yet female volunteers struggled with the physical strain of the job.

MCOTEA's assessment design did not require units to react to the actions of other units. For example, if a Weapons Company team was slow to get into position in an assessment, this did not affect the performance of the Rifle Company in the assessment. Operationally, a delay in supporting fire could increase risk to mission success, and the effects could contribute to other problems on the battlefield or in a campaign, where sequential timing is crucial. There was concern among male focus group participants that small differences in unit-level tasks, as might be seen between male and female performance, would gradually propagate into mission failure in a combined arms battle.

We asked leadership about gender-specific challenges encountered in the ITF that would affect combat effectiveness. Tank leadership noted that the current tank driver compartment is not physically suitable for a female urination device. They indicated that this is an operational issue because a female driver needing to urinate is required to shut down the tank and get out of the compartment—a practice that would be unacceptable in a kinetic environment. Because of this concern, women in the ITF dehydrated to avoid urination in tanks or LAVs. Dehydration led to heat casualties because of the temperatures in these vehicles.

Both male volunteers and leadership also expressed concerns about pregnancy in a combat unit and its impact on combat effectiveness. Tank and LAV leadership, for example, noted that one pregnancy among a tank or LAV crew will disqualify the entire crew. There are unplanned departures due to injury or disciplinary action in any unit, but the gender-specific nature of pregnancy is an added concern.

Leadership concerns about combat effectiveness with an integrated unit varied across the ITF. In general, however, leadership noted that the assessment phase did not reflect a true deployment and, therefore, it was difficult to judge how an integrated unit would perform in an operational environment. Some leaders speculated that they did not believe there would be an overall impact on the combat effectiveness of a platoon or battalion, because of the small number of women who would likely qualify for combat units. The majority of the leaders indicated that they did not anticipate an increase in readiness or operational benefits as a result of integration.<sup>11</sup>

---

<sup>11</sup> In the focus groups/structured interviews, GCE ITF leaders tended not to comment on whether they anticipated a decrease in readiness as a result of integration, although sometimes they expressed the opinion that they anticipated that readiness would not change.

## Good order and discipline

There is no definition of “discipline” in joint doctrine [23]; Marines generally know discipline as “*the instant willing obedience to orders, respect for authority, and self-reliance*” [24].<sup>12</sup>

Discipline had several different connotations in the focus group discussions. At the squad and platoon level, NCOs understand discipline as the corrections and courtesies inherent in their function; examples of poor discipline discussed in focus groups included talking back or questioning orders. At the company and command level, officers and senior enlisted responded to questions about discipline in terms of legal or personal issues that rose up to their level: driving under the influence of alcohol (DUIs), negligent discharge, domestic violence, and other behaviors that required nonjudicial proceedings or other action to be taken against a Marine.

### Survey results

Following the GCE ITF training phase, male and female volunteer groups had similar perspectives on unit discipline: 50 percent responded that discipline in their unit was good or very good, and about 15 to 20 percent felt that it was poor. In both cases, the modal response was that discipline in their GCE ITF unit was “good” (but not “very good”). These numbers were similar to the values seen in the baseline survey regarding discipline in the Marines’ previous units (see Figure 3).

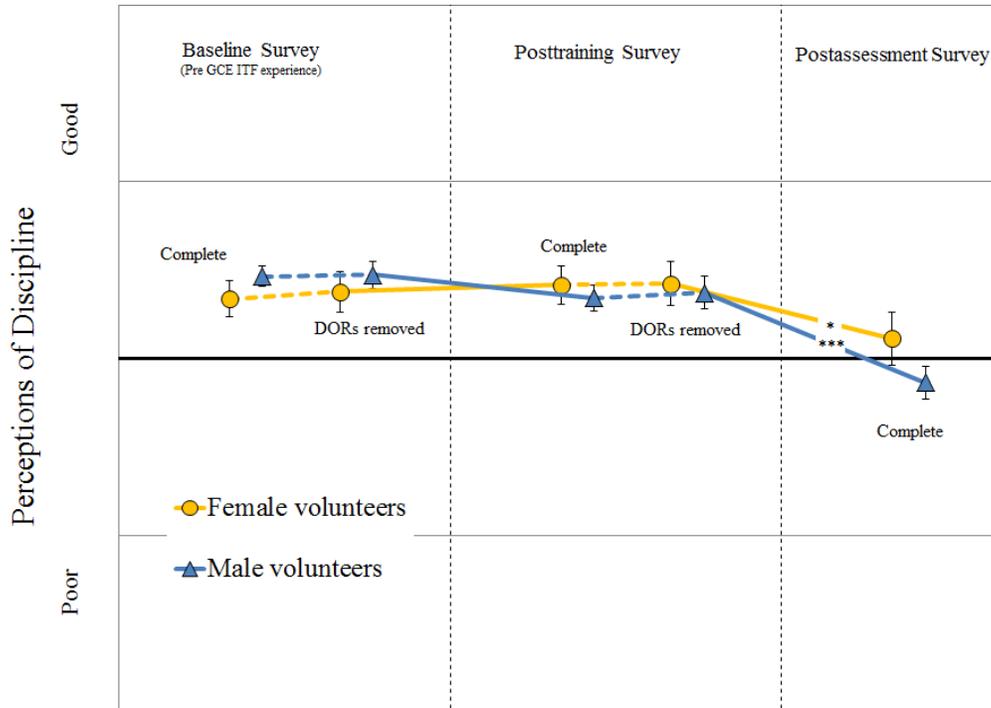
In the postassessment survey, the most common response was still that discipline in the unit was “good,” but overall the perception had shifted significantly to be more negative for both the men and the women in the GCE ITF: the percentage of men who thought discipline was good or better fell from 50 percent to 35 percent, with an equal proportion thinking it was poor. Among female Marines, 45 percent thought that discipline was good, and 25 percent (up from 15 percent) thought it was poor.

We asked if the presence of female Marines affected unit discipline. After the training phase, the majority (56 percent) of female Marines responded that gender integration had no effect on discipline, 37 percent responded that there was an effect and it was positive, and 7 percent said that the presence of female Marines degraded discipline. Male Marines were less enthusiastic: 40 percent responded that there was no effect on discipline, 29 percent thought there had been a positive effect, and 31 percent thought the women had degraded discipline.

---

<sup>12</sup> In certain cases, “self-reliance” is replaced with “teamwork.”

Figure 3. Assessment of discipline within their unit by GCE ITF volunteers



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

There was an interaction in the questions' answers. Before the assessment, male and female Marines who felt that discipline was good in the unit tended to think that women had a positive effect on discipline; about 25 percent of each gender responded in this way. Conversely, about 15 percent of male Marines thought that discipline was poor and that women in the group were in some way responsible. In comparison, 4 percent of women shared this perspective.

Following the assessment, significantly more men (33 percent) thought that poor discipline was the result of women in the unit, joined by about 10 percent of female Marines. At the end, fewer than 10 percent of male Marines thought that female Marines had a positive effect on discipline (compared with 29 percent after training). Though 32 percent of women still felt they had a positive effect, the proportion who thought they had a very strong positive effect on discipline fell from 7 to 3.5 percent.

## Focus group themes

### *Effects on NCO discipline*

In interviews, male NCOs expressed concerns about their ability to effectively discipline female volunteers: their perception was that female Marines often did not give instant, willing obedience to orders, instead “talking-back” or questioning orders. In addition, some were concerned about women’s emotional responses to being disciplined and noted that women would often cry or break down in an environment where it is unacceptable to do so. Some NCOs noted that, because of the way female volunteers reacted to criticism, they felt hindered in their ability to administer discipline due to fear of contributing to DORs.

Female NCOs expressed frustrations that, although they were experienced Marines, they did not have enough knowledge of their newly assigned MOS to lead and had to take direction from more junior Marines. They noted that this frustration lessened as the ITF went on and they gained more experience in their MOSs. The female volunteers also discussed a tension between the fact that they were expected to take direction from male Marines in training and in the field but were still senior to many of these same men in the barracks environment. An example provided was a female duty NCO in the barracks who had a difficult time getting junior Marines and peers to listen and obey.

Some male NCOs hypothesized that the discipline issues may have been a result of female volunteers being raised in different USMC communities and not being accustomed to the GCE community’s standard discipline procedures. Others felt that, because women were recruited and “treated with kid gloves” in the ITF to prevent DORs, women may have developed a sense of entitlement they would not normally have.

Others pointed out that, due to the ITF’s construct and its reliance on volunteers, female NCOs were often filling junior billets and taking orders from male Marines more junior in rank. This led to frustration both on the part of the female NCOs who were not accustomed to taking orders from Marines more junior in rank and on the part of the male Marines who were experienced in the MOS but met resistance when attempting to correct the female NCOs. Some leadership also indicated that several male volunteers had a difficult time taking direction and orders from female Marines because they were not accustomed to working with women.

The leadership of some ITF units also noted that there was more socialization between NCOs and junior Marines, as compared with a “normal” unit, and that this led to the dissolution of rank structure, which carried over to the battlefield. Leaders were concerned about the negative effects of the breakdown in rank structure in high-stress, life-and-death combat scenarios. Most, however, felt that, if women were

raised in the GCE community, the discipline problems that existed in the ITF would likely be corrected.

### *Going outside the chain of command*

Some leadership noted that junior female volunteers went to female NCOs in another platoon for mentorship and help with issues because there were no female NCOs in their platoon. Leadership noted that, although they didn't have a problem with female volunteers doing this in the ITF, this would be unacceptable for men because that Marine's chain of command is unaware of important issues. They suggested that integrated combat units will need to have female NCOs present before female junior Marines are assigned to them so that the female junior Marines have a support system within the chain of command.

### *Effects on unit-level discipline*

Overall, ITF leaders thought that their ITF Marines had fewer outside discipline problems (DUIs, fights in town, etc.). Leaders speculated that this was due to the expectations set forth for this group from the beginning as well as the fact that many of the volunteers were older and more senior in rank. Many male volunteers noted that they enjoyed having women around and that the presence of women encouraged them to "clean up their act" and display better behavior.

### *Close association*

Some volunteers indicated that sexual activity between Marines within their unit became a problem and speculated that it will continue to be a problem in the operating force. Volunteers also expressed concerns that female volunteers who were in relationships with male volunteers would be given preferential treatment, leading to a breakdown in unit cohesion and morale. "Close association" issues varied across the ITF, with some units expressing the opinion that it was not a problem and indicating that volunteers had a "brother-sister" type of relationship. Others, however, felt that relationships between volunteers were leading to significant problems both in the units and with spouses at home.

## Implementation issues

To be effective and to succeed in combat, ground combat elements—the infantry in particular—require instant willing obedience to orders. The GCE ITF participants shared the perception that this kind of obedience decreased as a result of having female Marines in the unit. ITF focus group and structured interview participants noted that this degradation may result from ITF artificialities, or from different or insufficient training in the service careers of the female Marines. Or it may be a result

of gender differences; perhaps women (for cultural or biological reasons) are more likely to take a consensus and discursive approach to orders.

The Marine Corps will need to consider when the integration of men and women should begin. GCE ITF volunteers and some leadership recommended that integration should begin as early as bootcamp for at least some aspects of training. Doing so would ensure that men and women are accustomed to the same discipline methods and would allow male Marines to become accustomed to working with women. Earlier exposure to women may alleviate some of the “fear of the unknown” that many male ITF volunteers experienced. Leadership and female volunteers noted that institution-wide, integration will be a greater adjustment for male Marines in GCE units because the majority of female Marines have spent their careers working with men. Integrating men and women in some aspects of bootcamp (such as academic courses and “The Crucible”) would address these issues.

Future GCE leadership will need to determine effective methods for counseling, disciplining, and motivating female Marines. Leadership will need to strike a balance between treating all Marines fairly and equally while also understanding what effectively motivates each Marine as an individual: Increased gender diversity will require a greater number of methods to motivate Marines. The Marine Corps will need to observe female Marines who have been raised in the GCE community to determine if standard methods of discipline in combat units can be taught.

The Marine Corps also will need to determine if it will permit female Marines to make lateral moves (latmoves) to all combat MOSs or if they only will permit Marine recruits to earn these MOSs at initial entry. If women are raised in a combat MOS, many of the discipline issues witnessed in the GCE ITF may be addressed. Without female latmoves, however, the Marine Corps will not be able to ensure that female NCOs are in place in integrated units earlier than junior women so they can provide mentorship.

## **Unit cohesion, trust, and teamwork**

Unit cohesion is a group property that attracts and aggregates members of the group, uniting them as a whole in social environments and collective tasks. Members of groups with social cohesion often interact together and perceive that others want to join their group [25]. Members of task-cohesive groups perceive themselves and other members of the group as working together toward a collective task [26-27]. Overall group cohesion can be enhanced by social and task cohesion. For example, the ability to interact with another individual and see how he or she behaves in a variety of environments (social, office, work, and operational) helps to build trust on how that person will act in other settings.

Cohesion can be measured through perceptions of those within the group, particularly the extent to which they trust other members of the group. There are several models and definitions of trust, but they share common themes. Trusted individuals have both the determination and integrity to follow through with a task, as well as a known level of competence to apply to the task: they do it and do it well. We designed survey and focus group discussion questions about trust and responsibility to determine the level of cohesion in the group.

## Survey results

We asked two different sets of survey questions to assess unit cohesion and the impact of gender integration on unit cohesion. In the first set of questions, respondents were asked to use a 5-level scale to score trust and teamwork within their unit. They also were asked how the presence of women in the unit had affected trust and teamwork. The second set of questions was based on the Physical Activity Group Environment Questionnaire (PAGEQ), looking at task cohesion from an individual and group perspective [28]. We found a correlation between the responses to the two sets of questions, and the responses show similar patterns.

### *Task cohesion*

The PAGEQ asked nine questions on a 9-point scale; then each Marine's responses were summed to give a score out of 81. Based on an analysis of the data, we defined perceived high cohesion as average scores above 64 and low cohesion as scores below 50. There also seems to be an individual perception of very low cohesion associated with scores of less than 36. In Figure 4, we compare Marine volunteers' posttraining and postassessment responses to the task cohesion questions.

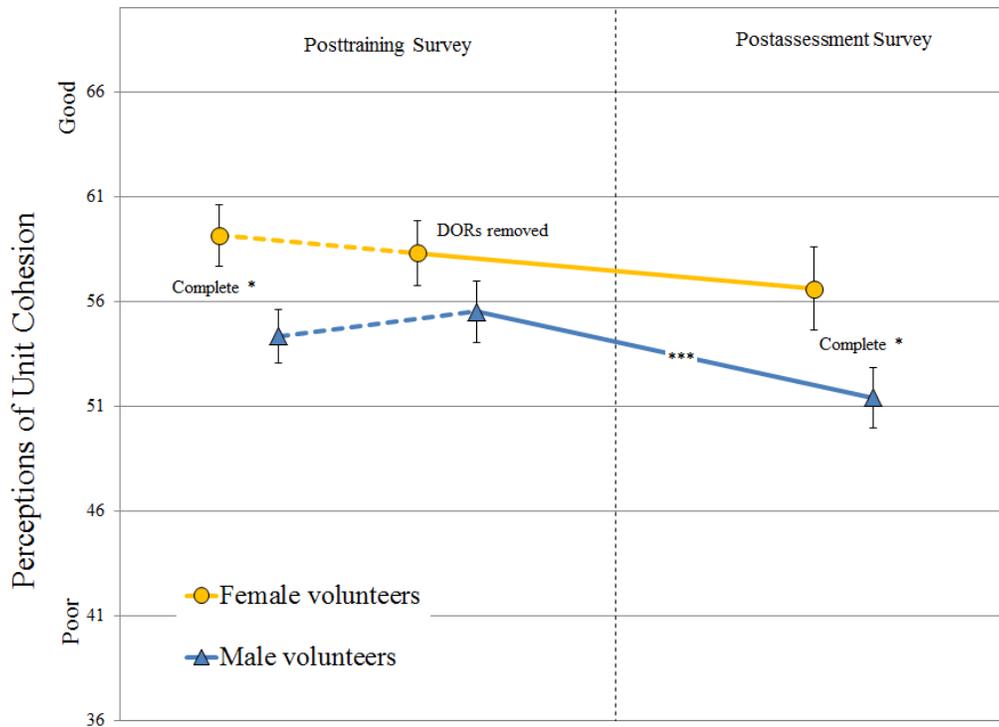
Before the assessment phase, the average PAGEQ cohesion score across the GCE ITF was 56 (medium to good): 31 percent of men and 36 percent of women reported high cohesion. The overall pattern of reported cohesion between men and women was similar, except about 15 percent of male volunteers (compared with 1 percent of female volunteers) reported cohesion scores below 36 (i.e., very low scores).

During the assessment phase, attrition was higher among male volunteers with lower assessments of cohesion and among female volunteers with higher scores. After the assessment phase, the average unit cohesion score had dropped to 53 (assessed medium, trending poor), a statistically significant drop among the male volunteers (see Figure 4), and the pattern had altered dramatically with more male and female volunteers reporting low unit cohesion and smaller proportions (21 percent of men, 28 percent of women) reporting high unit cohesion.

We found that cohesion as measured by this metric varied between units. Overall, the pattern was that units were less cohesive in the postassessment phase than they

were before; this is counterintuitive because usually we would expect groups to increase in cohesion over time [28].

Figure 4. GCE ITF Marine volunteers' perceptions of task cohesion (posttraining and postassessment surveys)



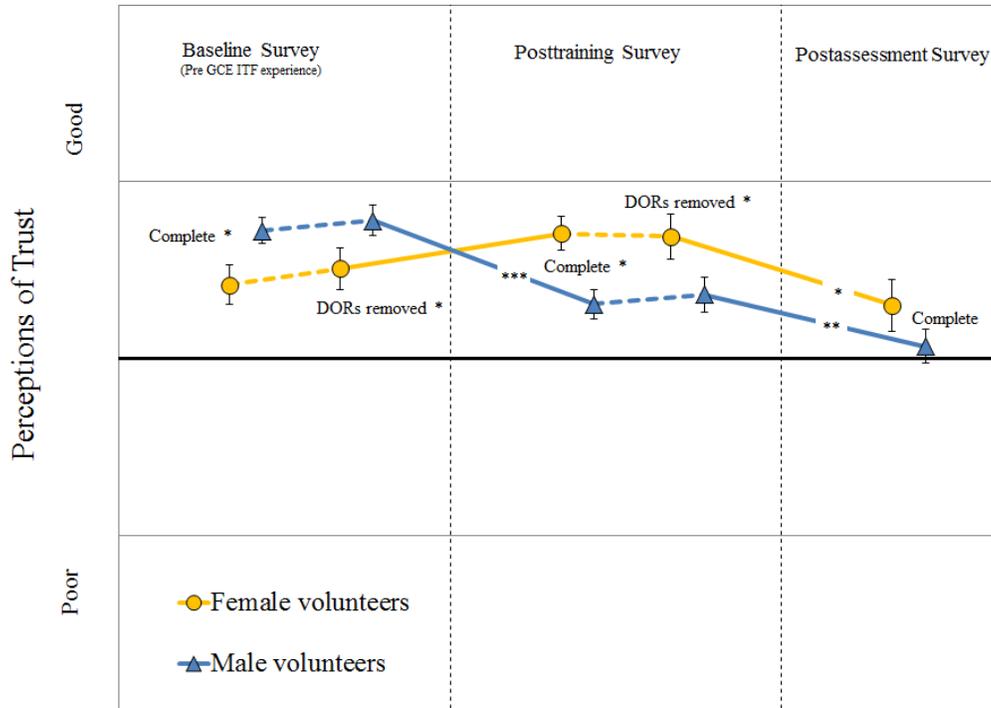
Source: CNA analysis of the Posttraining and Postassessment GCE ITF Climate Surveys.

### Trust in the units

Through the assessment phase, around 50 percent of male and female volunteers felt that trust in their GCE ITF unit was good or very good; however, a considerable group of male volunteers (21 percent) had concerns about poor trust in their group, and the average assessment of trust within the unit by male volunteers was significantly lower than experienced in their previous unit (see Figure 5).

Following the assessment phase, the population concerned about poor levels of trust grew: 30 percent of male volunteers and 26 percent of female volunteers felt that trust levels in the unit were poor or very poor. Average perceived trust decreased for both male and female volunteers, and the perceptions of the two genders were not statistically distinguishable by the end of the GCE ITF experience.

Figure 5. Assessment of trust within their unit by GCE ITF volunteers



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

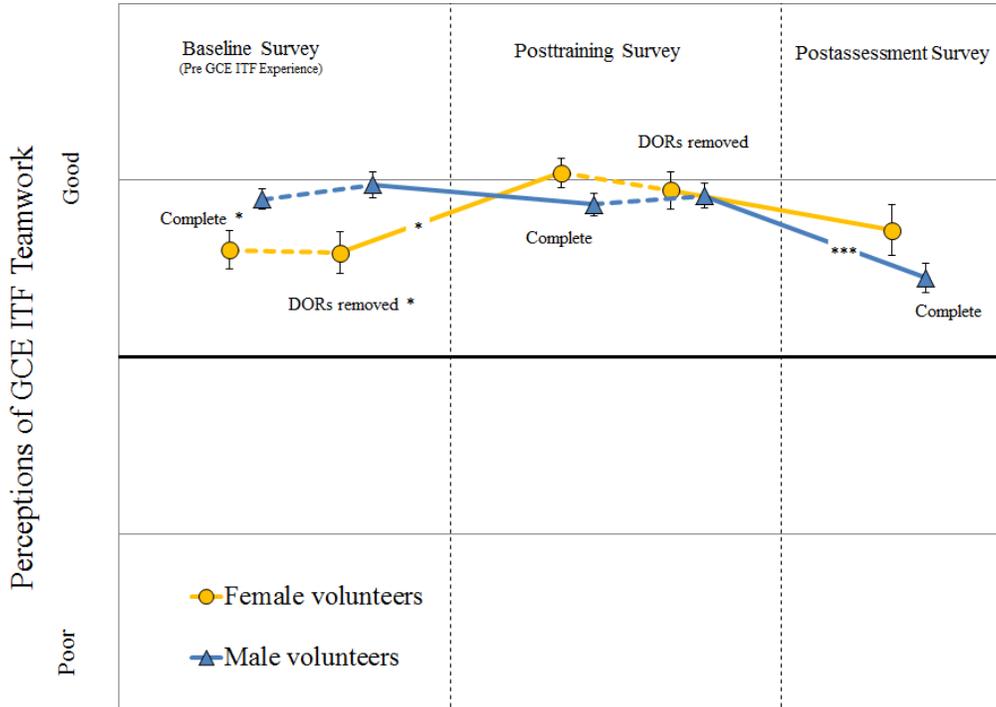
Before the assessment phase, 4 percent of women thought that their presence had degraded the trust in their unit, while a relatively large proportion of men (20 percent) thought that the presence of women during training had degraded trust. The pattern changed after the assessment phase; volunteers generally did not attribute good levels of trust in their unit to the presence of women. After the training phase, approximately 10 percent of male volunteers thought that trust was very good and significantly improved by female presence. After the assessment phase, however, this proportion dropped to less than 1 percent. Equivalently, after the assessment phase, poor levels of trust in a unit were associated with the degrading effect of the presence of women in the unit.

### Teamwork

After the training phase, more than 75 percent of male and female volunteers felt that teamwork was good or very good; few felt that teamwork was poor (about 6 percent). For the female volunteers, this was higher than their reported experiences in previous units (see Figure 6); for the male volunteers, it was about the same. At

this point in the GCE ITF, a large proportion of the volunteers indicated that the female presence had improved teamwork (41 percent) in their unit.

Figure 6. Assessment of teamwork within their unit by GCE ITF volunteers



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

Following the assessment phase, teamwork was still considered “good” by a majority of both men and women, but the average assessment was lower for both, and this difference was statistically significant for the male volunteers. Further, a larger proportion of the total considered it poor (6 percent after training, 15 percent after assessment). At this later stage, volunteers did not attribute good levels of teamwork in their unit to the presence of women. Similar to trust, after the assessment phase, poor levels of teamwork in a unit were associated with the degrading effect of the presence of women in the unit.

## Focus group themes

The focus groups highlighted several reasons for the presence or lack of unit cohesion across the ITF. We found that perceptions of cohesion varied by unit,

ranging from good to poor. The group's cohesion was influenced by many factors, such as the unit's leadership, perceptions that everyone was being treated equally, and relationships within the unit.

### *Social cohesion effects*

In units reporting good social cohesion, male volunteers said that they enjoyed having women in the unit and felt that the presence of women made them “clean up their acts” and display better behavior. Both male and female volunteers, as well as the leadership of units reporting good social cohesion, noted that the volunteers developed a sibling type of relationship and that socially they were very close. Both male and female volunteers in these units indicated that the other volunteers were considered friends and that the social integration was enjoyable.

Other male ITF volunteers, however, reported poor social cohesion and felt that the presence of female Marines disrupted the normal combat unit cohesion. They believed that the presence of women kept family-like bonds from forming in the unit.

Some male Marines felt that they could not be supportive of female Marines in their units without causing spousal conflicts. Others reported that romantic relationships within the unit led to cohesion problems and that male volunteers were competing for the attention of female volunteers. They indicated that romantic relationships within the unit disrupted the typical family-like mentality of a combat unit.

Both ITF volunteers and leadership commented on the importance of keeping men and women *together* in living quarters to preserve social cohesion. An example was provided that women were separated from men in the quarters at Bridgeport and that this had a large negative effect on social cohesion, which bled over into task cohesion. Both male and female volunteers indicated that separating unit members for sleep, hygiene, and other activities of daily living will reduce cohesion.

### *Task cohesion effects*

Task cohesion varied by ITF unit as well, with some units reporting better task cohesion than others. Some of the contributing issues discussed during focus groups and structured interviews follow:

- **Physical abilities:** In several cases, male volunteers noted that, if a female volunteer could not complete a physical task, they had to step in to assist or to finish the task. Many male volunteers felt that they had to pick up the slack for female volunteers who could not carry their weight (i.e., packs, gear, and equipment) and noted that this caused resentment and a breakdown in task cohesion. Leadership feedback indicated that they observed points in the assessment where male Marines would stop helping female Marines—most

likely, they felt, out of frustration. Some female volunteers noted frustration when they perceived that they were being left to struggle.

- **GCE ITF assessment design:** MCOTEA's assessment required volunteer rotation in tasks to generate sufficient observations to support analysis. This artificiality may have decreased cohesion during that time. Some volunteers said that cohesion happens, in part, through constantly being together and working together as a crew over many months. During the assessment phase, many felt that the crews rotated so frequently that it was not possible to build those bonds. Male and female volunteers as well as leadership felt that crew integrity and cohesion was low at times because of personnel rotations mandated by the assessment design.
- **Uneven discipline and standards:** Male volunteers said that, when female volunteers were treated more gently, the chemistry of the squad or team was disrupted. In one example provided, a male volunteer noted that it hurt cohesion when women were allowed to be sick and take time to rest and come back fresh, while men were not allowed the same treatment. Male volunteers also noted that it was frustrating to see women DOR and then be allowed to come back. Conversely, some female volunteers, as well as some leadership, felt that women were treated more harshly at times, perhaps to avoid the perception of favoritism, and that this also hurt cohesion. Many stated that discipline standards should be applied equally in order to have a cohesive unit and that women cannot be treated differently from men.
- **Romantic relationships within the unit:** Male and female volunteers indicated that romantic relationships led to perceptions of favoritism and preferential treatment, resulting in resentment and a breakdown in unit cohesion during training and in the field environment. Several male volunteers also commented that, if a unit is in combat and a man and a woman are both wounded, the natural instinct for the man is to "save the little sister of the platoon." They felt that this was detrimental to unit cohesion. Company-level leadership and below seemed to be aware of romantic relationships and noted that these issues were dealt with, as necessary.
- **Hardship and time spent together:** Male volunteers from some units felt that cohesion is bred through shared hardships and that, because of the comparatively "more gentle" nature of the ITF compared with the operating forces, cohesion in the ITF was not comparable to that of a unit in the operating forces. Other volunteers and leadership, however, reported that cohesion in their particular units was the best that they had experienced in the Marine Corps. They attributed this, at least in part, to the significant time that they spent together in the field. Those who felt that cohesion in their unit was high also felt that they eliminated gender as an issue; they ate together and bunked together at all times. Some of the ITF leadership also indicated that

being open-minded and allowing women to train for everything set an example for the men in the unit that led to better cohesion. They felt that, if they didn't box the women out and treated them not the same but fairly, the men in the unit would do the same thing.

### *Female volunteers' views*

Although the women generally had a more positive view of cohesion than the male volunteers, they also expressed a wide range of views on the degree of cohesion in their respective units. Some women felt that they were accepted by male volunteers from the beginning and indicated that the men were eager to teach them and help them to succeed. Others felt that they had to prove that they were physically and mentally able to be a part of the unit before men started to accept them, and at that point they felt that cohesion improved. Others reported poor cohesion throughout the ITF, noting that they felt that the men did not want them there. There was a general perception from women reporting poor cohesion that many of the male volunteers as well as some of the leadership were against integration and were actively trying to prevent them from succeeding. They noted that they felt a lack of acceptance, brotherhood, and camaraderie and were faced with a "we don't want you here" attitude throughout the ITF.

## Implementation issues

GCE ITF participants had a wide range of views regarding cohesion in their respective units, from some saying that cohesion was the highest that they had experienced in the Marine Corps to others saying that cohesion was poor or nonexistent. The lack of cohesion in particular units could result from many things, including perceptions of preferential treatment, resentment over poor performance, or the views of the ITF's Marines and leadership.

Focus group and structured interview participants agreed that, to achieve cohesion, unit leadership must set the tone by treating everyone in the unit fairly and equally. Being treated equally extends to physical standards, performance expectations, and, for many of the volunteers, the manner in which unit leaders communicate with and provide correction to their Marines. Enlisted SNCOs, in particular, noted that this will be a challenging adjustment for them because they have no experience working with female Marines. Under gender integration, ground combat Marines will need to learn how to establish a climate of "fairness" in their unit, as well as take on new management responsibilities, such as dealing with romantic relationships and discouraging close association among Marines.

Finally, based on GCE ITF experiences, male and female Marines may find it hard to develop into a cohesive unit when they are physically separated (for example, housed in different living quarters). Volunteer and leadership feedback noted that a unit

should be a unit, and should be allowed to live together and train together. This has implications for facilities and barracks that will need to be reconfigured to support this level of integration.

## Morale

The concept of morale includes both an enthusiasm and confidence of a group or individual, and a common purpose that values the tasks or functions of the group.

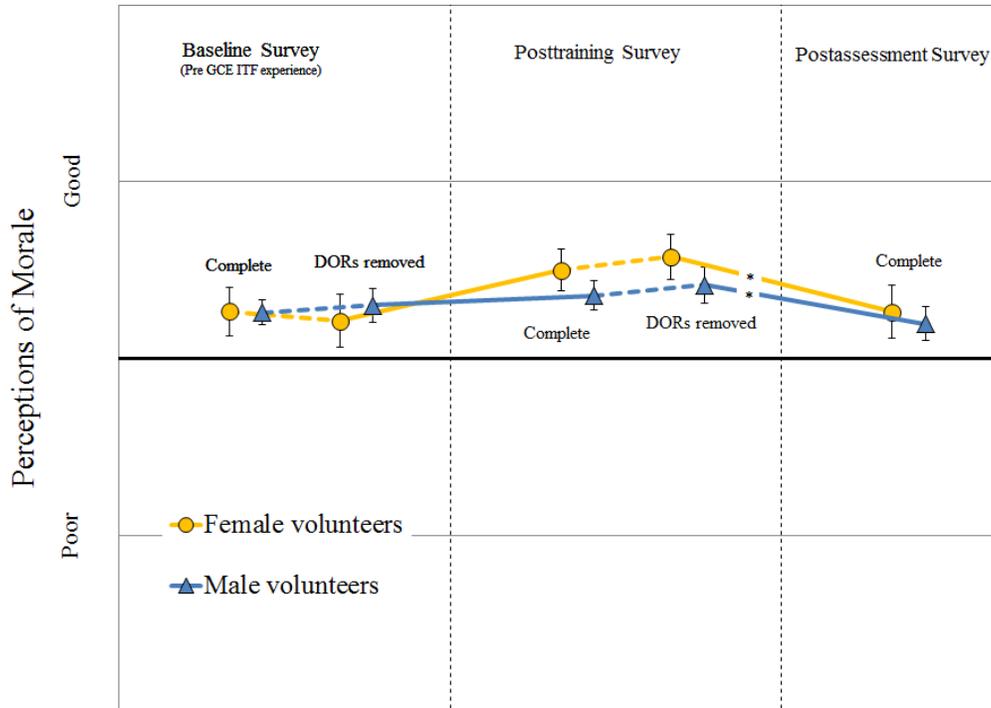
Morale was discussed in GCE ITF focus groups and structured interviews. In surveys, we used surrogate questions about retention and recruiting to assess morale: Marines who value their service in the Marine Corps are likely have high morale and also are more likely to stay in the Marine Corps or recommend service to others.

## Survey results

The patterns and shifting of morale among volunteers was similar to patterns of cohesion. Following the training phase, morale was relatively high: 61 percent of female volunteers and 53 percent of male volunteers (57 percent after attrition) reported good morale. The distributions of morale scores were higher than volunteers reported in their previous unit (50 percent for women and 47 percent for men); and 24 percent of male and 18 percent of female volunteers thought morale was low. The averages however, were about the same as encountered in previous units (see Figure 7). Among ITF volunteers, 40 percent of women and 37 percent of men reported that women in the unit had improved morale during the training phase; 20 percent of men and 6 percent of women thought the presence of women in the unit had degraded morale.

Morale was lower after the assessment phase, and for both men and women this drop was statistically significant. The proportion of women experiencing good morale dropped to 47 percent, and the proportion reporting poor morale increased to 28 percent. For men, it was a decrease in variance. Both high and low morale reports decreased to 44 percent and 20 percent, respectively. Both men and women attributed some of the morale degradation to female presence in the unit—38 percent of male volunteers and 19 percent of female volunteers. Among women, 30 percent thought that female presence still was improving morale; 18 percent of men shared that opinion.

Figure 7. Assessment of morale within their unit by GCE ITF volunteers



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

## Focus group themes

Similar to cohesion, volunteers in the focus groups reported varying morale levels across the ITF. Among units that reported good morale, volunteers said that both the men and women worked hard and sought to help each other complete tasks and overcome obstacles. Volunteers who reported good morale also tended to report good cohesion within the unit and they felt that their leaders did a good job of keeping morale up and motivating everyone in the unit.

Among units that reported poor morale, male volunteers expressed concerns over deploying to combat zones due to low confidence that female volunteers in their unit could endure the physical and psychological stress over time. They also expressed concerns that a female Marine could successfully save the lives of larger male Marines who were injured. Some male volunteers noted that, although they were confident that male Marines in their platoons would “have their back,” they did not have confidence that female Marines would do the same.

In addition, some male volunteers said that integration would negatively affect the elite feeling of Marines within the Corps, and they feared it would make the Corps look like a softer target.

## Recruiting and retention

### *Survey results*

As a potential surrogate measure of morale, the GCE ITF volunteers were asked how much longer they intended to stay in the service, with three possible choices:

- Until retirement
- Past the present obligation but not until retirement
- Just until the end of the present obligation

In November, at the start of the ITF, the distribution of responses was relatively even, with about one-third of Marines falling into each category. The even distribution, however, was driven by male Marines. GCE ITF female volunteers were less likely to respond that they were remaining in the Marine Corps until the end of the present obligation—14 percent. The remaining 86 percent of female volunteers were split evenly between staying in the Marine Corps past their present obligations and staying until retirement.

There was some shift in responses following the training and assessment phases. For example, at the end of the study, a larger proportion (38 percent) stated that they intended to leave the service at the end of their current obligation. However, this was largely explained by attrition among Marines who intended to stay until retirement.

A willingness to remain in the Marine Corps after the end of their present obligations differed for DORs and non-DORs. More DORs said that they planned to leave on completing their present obligation (38 percent of DORs planned to leave versus 25 percent of non-DORs). In addition, DORs were more likely to say that deployment-related considerations will affect their willingness to remain in the Marine Corps (33 percent of DORs versus 23 percent of non-DORs). This could be explained by the fact that more DORs than non-DORs had deployed.

Furthermore, DORs' willingness to recommend service to their friends and family was influenced more negatively by the integration of women into combat PMOSs and combat units. Twenty-five percent of DORs said that they would be less likely to recommend Marine Corps service to men if combat PMOSs and units are open to women, compared with 10 percent of non-DORs. DORs also are less likely than non-DORs to recommend service to women if ground combat PMOSs and units are open to women (31 percent of DORs versus 19 percent of non-DORs).

To the extent that career choice intentions provide insights into a unit's morale, it does not appear that morale was appreciably higher or lower following the GCE ITF assessment phase.

### *Focus group themes*

In focus group discussions, the majority of male volunteers indicated that their career plans would not change based on integration. Some did indicate that they were choosing to leave their MOS or the Marine Corps as a result of integration. Others stated that the demands of integration and their passion for their occupation were motivation to stay with the MOS and help see it through what might be a challenging adjustment period.

Most female volunteers noted in the focus groups that their experience in the ITF did not affect their reenlistment decisions, although some indicated that this was the case and that they would be leaving the Marine Corps at the earliest opportunity. Some female reserve volunteers also indicated that they had considered moving to active duty prior to the ITF but changed their minds after their experience. Nearly all female volunteers who planned to reenlist indicated that they would return to their prior PMOS and would not request a latmove to a ground combat MOS.

The majority of female volunteers were not interested in joining a combat MOS after their ITF experience. Although some noted that this disinterest was related to career or family reasons, others said that they had previously wanted to join a combat MOS but that they no longer wanted to do so because of the negativity they had encountered in the ITF. They felt that morale in their particular unit was very low and that, although they felt capable of doing the job, they did not feel that they would be accepted by the GCE community.

Some women in units reporting low morale said that, although they felt excited and motivated by their time spent in the schoolhouse before the ITF, being a part of the unit changed that enthusiasm because they felt that many of the male volunteers did not support integration. Of the few women who expressed interest in a lateral move to a combat MOS, they said that morale in their unit was high and that they felt included by all members of the team.

## Implementation issues

Like unit cohesion, to achieve good morale, GCE leadership must set the tone and treat everyone in the unit fairly and equally. Physical standards for men and women should be the same, as should expectations for performance. All Marines will need to prove they can succeed in the unit and that they have the physical and mental toughness required for a combat unit. Both survey and focus group results indicate that male Marines will be more accepting of female Marines who have met

established physical standards; having the most capable Marines in a ground combat unit will contribute to good morale and cohesion.

## Creativity and problem solving

Marine Corps doctrine [29] emphasizes creativity to generate opportunities in maneuver warfare. Marines are expected to operate in scenarios where they are outnumbered and to win by using their skills and cunning. Unlike attrition warfare, which is characterized by a direct approach and relies on procedure and technical proficiency, maneuver warfare requires creating and exploiting enemy vulnerabilities to generate decisive results.

As combat systems and solutions increase in complexity and sophistication, there is a requirement for a broader approach to problem solving. There may be systems or scenarios in which women can bring a different perspective to problem solving or a different approach to creativity or innovation that will increase the probability of mission success. The surveys did not include questions regarding creativity and problem solving. This was a topic that emerged from the focus group/structured interview discussions.

### Focus group themes

In the focus groups, male volunteers noted that female ITF volunteers did not always display an instant, willing obedience to orders but would instead spend time discussing options for completing the task, often with other female volunteers. Traditionally in GCE units, however, creativity and brainstorming are not expected as a response to a direct order. Some male volunteers said that, while this may be a mature method to solve a problem, they felt it was inappropriate in a combat environment. ITF leadership noted, however, that female volunteers were responsible for some innovative solutions as a result of this approach to problem solving.

Almost all focus groups discussed the workarounds or alternative solutions developed by female volunteers who were unable to complete a physical task due to body size or upper-body strength. In the LAV platoon, for example, the female volunteers came up with an innovative method of changing vehicle tires that reduced the physical strength required. However, a method to don a heavy rucksack was disparaged: “We have never before celebrated anyone picking up a rucksack in the Marine Corps.” Certain solutions—particularly those involving opening heavy doors or removing equipment from armored vehicles—were considered dangerous by some experienced male Marines, though others saw the novel-but-risky methods as a first step in the innovative process.

# Attitudes Regarding Gender Integration

In this section, we address attitudes by members of the GCE ITF on individual-level issues and measures associated with gender integration. These are based, in part, on measures identified before the GCE ITF and, in part, on survey response trends. Gender integration attitudes discussed here include overall support of women serving in combat roles, the concern that female safety and security will be sacrificed, career concerns of both males and females in an integrated unit, female physical condition, integration of living quarters, and other specific concerns of female volunteers.

## Support for women serving in combat roles

### Survey results

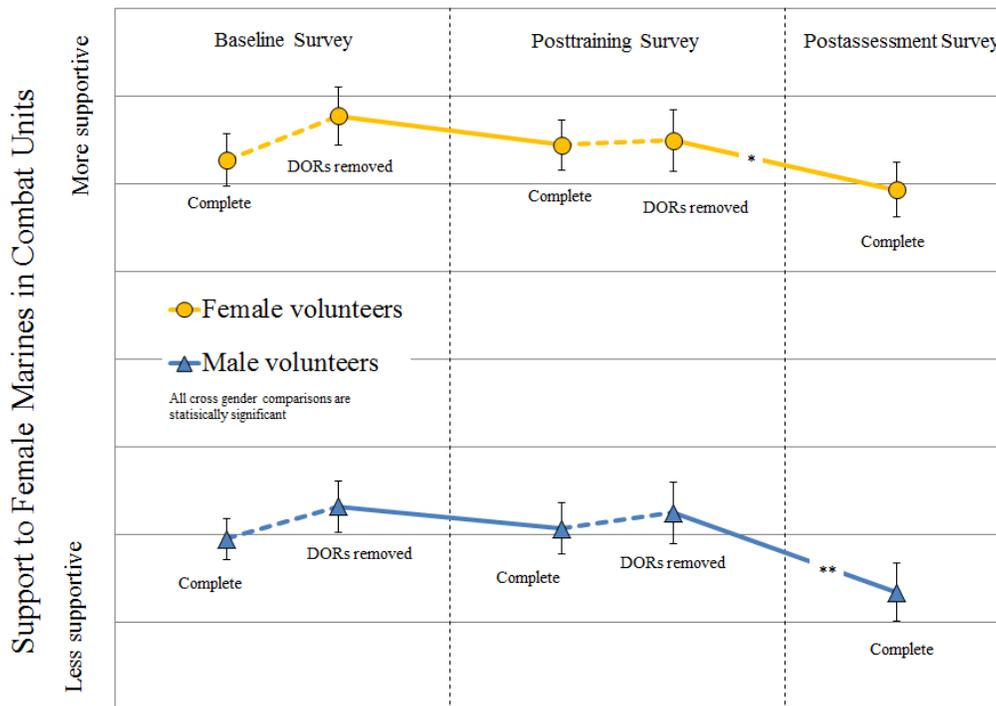
Each survey asked volunteers if they supported women serving in ground combat PMOSs or being assigned to ground combat units in non-combat-arms PMOSs. We used responses to these questions both to gauge an overall support for assignment of female Marines to units and PMOSs and, later in this report, to consider volunteers' perceptions about women in specific billets or roles.

In addition, we provided survey participants with a list of 24 potential outcomes resulting from women being assigned to ground combat units or serving in combat arms PMOSs. Volunteers selected a response to indicate whether they thought each outcome was more or less likely following a policy change.

We used the principal components analysis (PCA) statistical technique to build responses to the 24 potential outcomes into a single metric of overall support: Marines with high scores (greater than 5) had the general opinion that female Marines in combat roles or attached to combat units would have positive effects (e.g., increases in professional behavior, unit cohesion, and combat effectiveness). Those with low scores (less than -5) had the general opinion that female Marines would have negative effects (e.g., increases in sexual assault allegation, unit vulnerabilities to casualties, and more nondeployable Marines).

There was a correlation between the responses to these two sets of questions: those who supported assignment of female Marines to combat units or PMOSs also tended to think that the assignment would have positive effects (see Figure 8). There also was variation, however—some individuals responding positively to women in combat roles, even though they predict negative effects with integration, and others seeing beneficial effects of women in combat roles but still opposing their assignment.

Figure 8. Marine volunteers' support for female Marines in combat units, by gender and survey phase<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

<sup>a</sup>. We describe the PCA method, the survey items that load on the “support for females in combat units” component, and our PCA results in Appendix C.

Male volunteers were initially distributed across the spectrum of support, though trending toward opposition: approximately 15 percent strongly opposed and 30 percent generally opposed; 3 percent were strongly in favor, 26 percent were generally in favor; and 26 percent were ambivalent (i.e., opposing on one measure but supporting on another). Female volunteers generally were supportive: 0 percent strongly opposed, 2 percent generally opposed, 18 percent were strongly in favor, and another 57 percent were generally in favor; 23 percent were ambivalent.

During the training phase, there was heavy attrition among men, largely among those opposed to women in combat roles. Rates were as high as 55 percent, particularly among those who thought that there would be significant negative effects with the integration of women into combat units. Attrition among women was lower, though also largely removing those who perceived that female presence in a combat unit would have negative effects. In general, there was a statistical difference in baseline survey responses between DORs and non-DORs in the outcomes associated with women in combat roles. DORs believed that outcomes that were negatively associated with women in combat were more likely than non-DORs did, while non-DORs believed that outcomes positively associated with integrating women into combat were more likely than DORs did (see Table 3).

Table 3. Comparison of non-DOR and DOR volunteers' perceptions regarding more likely outcomes associated with gender integration in GCE units

Outcomes that non-DORs believe are more likely than DORs do	Outcomes that DORs believe are more likely than non-DORs do
Increased professional behavior Female Marines having the physical capabilities required for their jobs Female Marines being treated equally by their peers/fellow Marines Female Marines being treated equally by leadership Female Marines getting direct combat experience Increased female lateral move opportunities	A unit being vulnerable to combat casualties A decrease in male promotion opportunities Male Marines being distracted from their jobs An increase in nondeployable Marines A decrease in combat unit effectiveness A decrease in unit cohesion Some Marines getting preferential treatment An increase in sexual assault allegations An increase in sexual harassment allegations

Source: CNA analysis of respondents' answers to the Baseline GCE ITF Climate Survey Question 15.

After the training phase, the distributions looked very similar to the baseline, despite the attrition of volunteers who were most opposed to integration. All male numbers were within 2 percent of baseline values (attitudes had hardened, with some men feeling less generally supportive and trending more negative). Some male volunteers moved their opinion slightly more positive—more supportive of women in a combat role. Meanwhile, fewer female volunteers felt very strongly in favor (12 versus 18 percent previously), but ambivalence also had dropped (12 versus 23 percent). More female volunteers were now in favor (73 versus 57 percent).

During the assessment phase, there was again attrition among male volunteers. Again, it was more common among those who were less supportive, particularly among those opposed to women in combat units. Female attrition was highest among those who were quite supportive of unit integration (although nonsupporting women were rare).

Despite skewed attrition, the distribution of support following the assessment phase was strongly negative: 61 percent of male volunteers opposed or strongly opposed integration, ambivalence fell (to 27 percent from 22 percent), and support dropped from 29 percent to 17 percent—with no men strongly supportive of gender integration. Female volunteers also had decreased their support: almost 10 percent were now opposed. The majority of women (76 percent) were still supportive (though 11 percent were strongly supportive), and 15 percent of female volunteers indicated that, although integration was beneficial overall, they generally did not support assignment of women to combat units.

## Leadership perspective

We spoke with ITF leadership to assess their level of support for integration. ITF leadership expressed concerns over the ability of female volunteers to evacuate casualties and hike under heavy loads, particularly in infantry units. Almost unanimously they said that they did not see any female performance that would improve the readiness of a combat unit; many were concerned that the extended time taken for integrated units to complete a movement could hurt combat effectiveness.

Some leadership noted, however, that because there will be so few women interested and qualified in combat MOSs (in the infantry in particular), they expect no change to overall readiness. Their opinion was that some women will perform well and some will not, but overall readiness of the company/battalion will not be affected: Marines will find a way to get the job done.

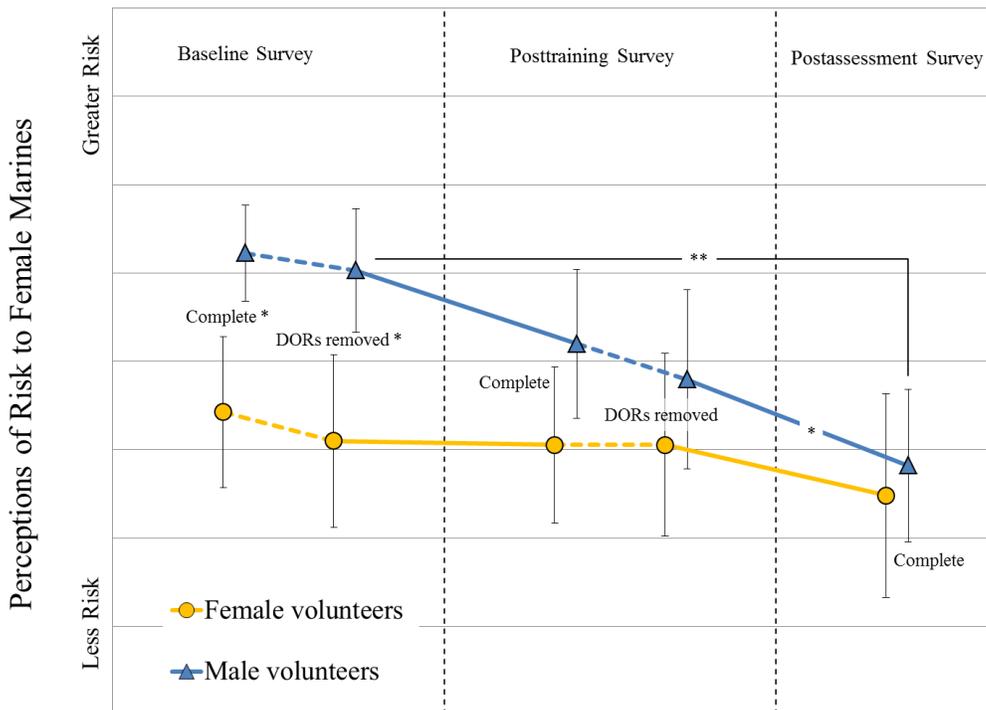
All ITF leadership noted that the most critical piece of integration will be to determine the correct standards and to enforce them. Some felt that if this was done correctly, there would be no effect on combat readiness. Most ITF leadership did not believe Marines would sustain higher casualty rates due to integration: commanders will restructure their forces to ensure mission success—leaving some women and men behind if necessary. They also felt that if the Marine Corps can get physical and mental standards right, it will have a higher probability of having the most qualified, capable Marines in those billets. However, leadership also indicated that standards need to vary by MOS. Overall, ITF leadership's support for integration varied by unit. Many leaders indicated that the Marine Corps would approach and implement integration to the best of its ability but that it would not be without challenges and hurdles along the way.

## Risk to female security

### Survey results

We asked volunteers about the potential outcomes of assigning female Marines to combat units or combat PMOSs. Using PCA, we found that the third principal component (PC3) reflected a “risk to female Marines”: individuals who scored high on this component responded that women assigned to combat units or PMOSs were more likely to be at increased risk of sexual harassment and assault, and at increased risk of being targeted by enemies (see Figure 9). This perception of risk was independent of whether Marines supported female assignment to these roles. In the baseline survey, there was a statistically significant gender split in responses with male volunteers averaging high scores and female volunteers averaging low (negative) scores. Male volunteers predicted that integration would put female Marines at greater risk; female volunteers did not.

Figure 9. Marine volunteers' perceptions of risks to female Marines, by gender and survey phase<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

<sup>a</sup>. We describe the PCA method, the survey items that load on the “risk to female Marines” component, and our PCA results in Appendix C.

The training phase did not change female attitudes on average. However, it did change male attitudes: their average score decreased (less perceived risk to females). This decrease was a function of an average change in perception rather than attrition. We note that the change in male scores was not statistically significant between the baseline and posttraining surveys.

The assessment phase caused a statistically significant decrease in perceptions of risk to female safety. Female and male average scores dropped further. By the end of the ITF, there was not a statistically significant difference in the scores of men and women. The remaining volunteers in both gender groups had concluded that the risk to women was much lower than their initial assessment.

## Focus group themes

### *Sexual harassment and assault*

Both volunteers and leadership addressed the issue of sexual harassment and assault in integrated units in the focus groups. Some felt that sexual harassment and sexual assault in integrated units would be a problem, particularly if there were a small number of female Marines in a unit. Others felt that integrated units would receive the same Sexual Assault Prevention and Response (SAPR) training as all Marine Corps units, and women in these ground combat units would not be at any greater risk than women in the rest of the Marine Corps.

Female volunteers, in general, did not express concerns about sexual assault on an individual level, though some noted that, for the safety and comfort of future women in integrated units, there should be several women assigned to the unit as opposed to one or two.

Some male Marines, however, expressed fears about false allegations of sexual harassment or assault in integrated units. They noted that they were hesitant to correct female Marines or to physically remove them from potentially dangerous situations due to fear of sexual harassment allegations.

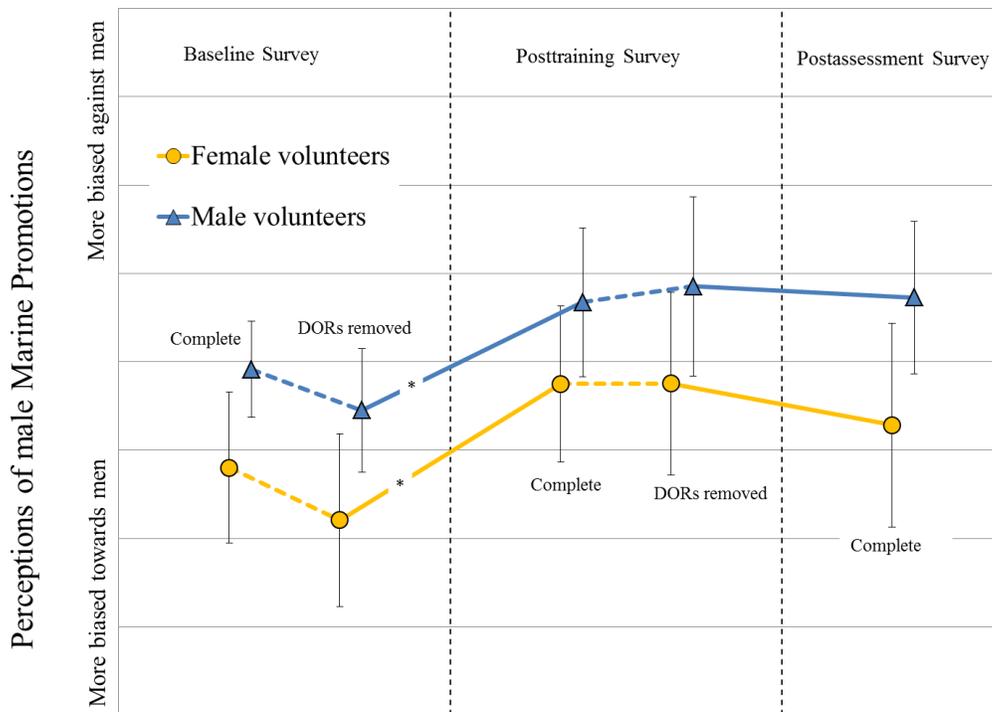
### *Targets in combat*

Although this topic did not come up frequently in the focus group discussions, some male Marines were concerned that female Marines in GCE units would become targets in combat. They also expressed concerns that if a female Marine in the unit was targeted or injured, the male instinct would be to save and protect the woman, perhaps risking the safety of the rest of the unit in the process. Some male Marines also expressed concerns that having women in ground combat units would make the Marine Corps appear less elite and weaker and that enemies would target them.

## Male promotion concerns

In the survey, we asked volunteers about the potential outcomes of assigning female Marines to ground combat units or PMOSs, and we used PCA to determine independent themes in this data set. The fourth principal component (PC4) reflected a “promotion opportunity” or male promotion bias trade-off: Marines who scored high had responded that integration of ground combat units and PMOSs would lead to a decrease in male promotion opportunities and an increase in female promotion opportunities, along with more equal treatment of female Marines by leadership and peers. This perception of gender opportunity changes was independent of whether the respondent supported female assignment to these roles (see Figure 10).

Figure 10. Marine volunteers' perceptions of male Marines' promotion opportunities under gender integration of ground combat PMOSs and units, by gender and survey phase<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

<sup>a</sup> We describe the PCA method, the survey items that load on the “perceptions of male promotion opportunities” component, and our PCA results in Appendix C.

Male volunteers on average moved from a generally neutral stance—there would be no change to male promotion opportunities—to a perception that gender integration in GCE units and ground combat PMOSs would result in lower promotion opportunities for men. This shift was statistically significant. Female volunteers, on average, had fewer concerns about bias against men in promotion opportunities, but the trend in their responses tracked with changes in male volunteers' perceptions.

Male volunteers also expressed concerns regarding the effect of integration on male promotions in the focus group discussions. They noted that, with the current difference in PFT and CFT standards for men and women, less physically capable women potentially could be promoted faster than more physically capable men. The male volunteers who raised this concern felt that when female volunteers who were perceived to not be as skilled had been promoted over male volunteers, this was detrimental to unit cohesion and morale. However, we note that female volunteers who were promoted during the ITF were promoted in their original PMOSs, not their temporary GCE ITF PMOSs.

Female volunteers shared concerns regarding promotion opportunities but, on the whole, did not feel that they were likely to take promotions away from male Marines. Both male and female volunteers felt that physical standards and tests (PFT/CFT) need to be reconciled to support the most capable Marines—whether male or female—being promoted and prevent a more capable male Marine being passed over for a less physically capable female Marine who scored higher on the gender-normed tests. They felt that equalizing these standards would help to alleviate the perception of favoritism.

## **Female careers**

### **Effect of ITF experience**

Female volunteers had varying opinions of the effect of their ITF experience on their careers. Some female volunteers felt that they had gained leadership skills and that the experience, in general, was good for their resumes. These women also expected positive career effects, citing the GCE ITF's high visibility, and felt that the experience would make them more competitive for promotion.

Conversely, some female volunteers felt that their ITF experience hurt their PMOS credibility because they had lost a year and a half of experience. These women expressed concerns about their ability to get promoted because of this perceived loss of MOS credibility. Others were not concerned about the GCE ITF experience hurting promotion potential, but also felt that, because of the loss in MOS credibility, there was no net gain from the experience.

## Ground combat PMOS careers

As we discuss later, the majority of female volunteers we spoke with were not interested in pursuing a ground combat MOS and planned to return to their original PMOS, become drill instructors, or leave the Marine Corps. During focus groups, female Marines cited various reasons for not pursuing a latmove to a GCE unit, such as family concerns or the sense that a latmove would be detrimental to them at this point in their Marine Corps career.

ITF leadership also expressed concerns about the effect on female Marines' careers of being in a ground combat PMOS. Some said that being in a combat unit would be a considerable career hurdle for women, both physically and mentally, during the first four years of their careers. They were uncertain as to what a female Marine's promotion potential would be. At this time, the Marine Corps has no data on female Marines' career progression in ground combat PMOSs because female Marines have not had the option to enter these PMOSs. The Marine Corps will need to assess the effect of gender integration in ground combat PMOSs on female Marines' careers in the future.

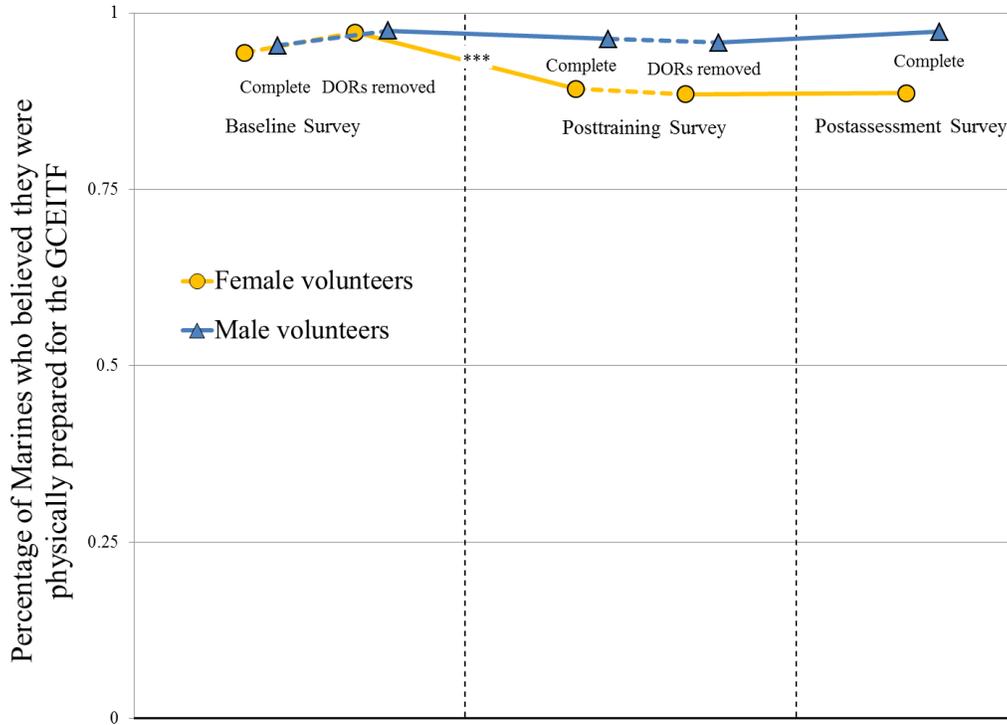
## Female Marines' physical preparation

Throughout the surveys and the focus groups, volunteers and leadership raised concerns that women might not be physically prepared for service in GCE units and PMOSs. Several factors potentially may have contributed to women's perceived lower levels of preparation. Because women and men are separated at bootcamp, and because women came from other MOSs that might have been less physically demanding than ground combat PMOSs, some thought that women might have received different levels of physical training than men. Also, because the PFT and CFT scoring standards are different, there was concern that there is no way to easily compare the physical abilities of women and men to see if Marines meet an acceptable physical standard for service in ground combat PMOSs and units.

## Survey results

We asked GCE ITF Marine volunteers whether they and their peers had the physical abilities to meet the requirements of the GCE ITF position. In all phases of the survey when asked about personal fitness levels, an overwhelming majority of Marines indicated that they were physically able to meet the requirements of their GCE ITF position (see Figure 11).

Figure 11. GCE ITF Marine perceptions of their physical preparedness for the GCE ITF<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

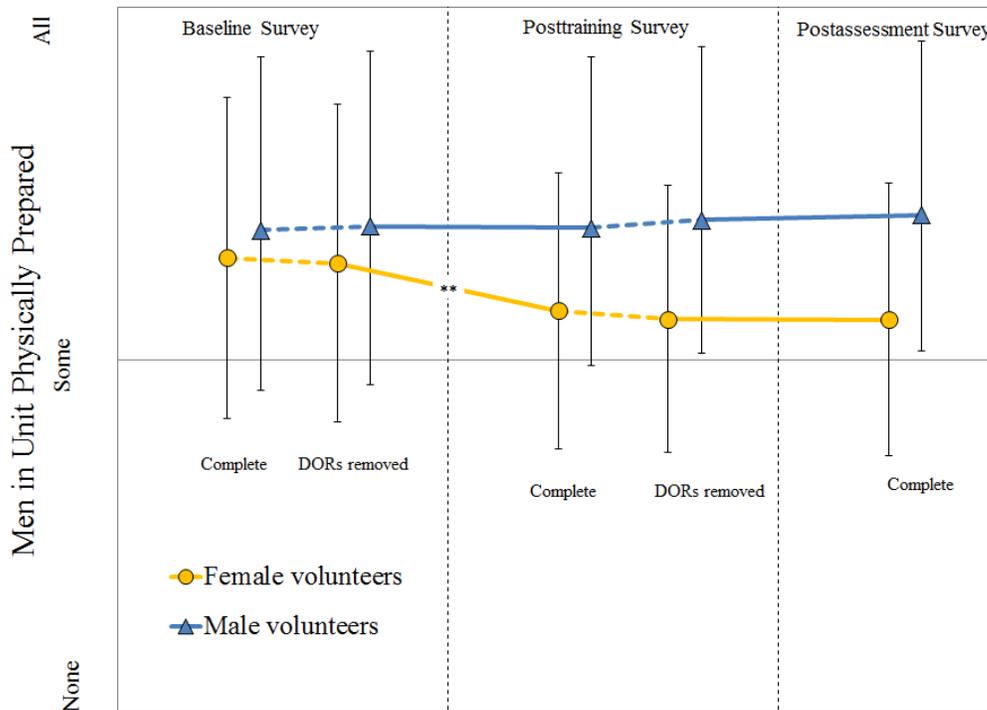
<sup>a</sup> We code a “no” response as 0 and a “yes” response as 1. Cross gender comparisons are statistically significant in the posttraining and postassessment survey.

In the baseline survey, there was no gender difference in Marines’ self-assessments of their physical preparedness: proportions were the same among the men and women, and about 5 percent thought they did not have the strength (see Figure 11). After the assessment, however, there was a statistically significant difference in the proportion of men and women who did not think they had the physical strength to meet the requirements of the GCE ITF (2 percent of men, 12 percent of women). It is possible that that this change may be a result of the DORs and those who did not take the postassessment survey. Yet, as more volunteers became DORs, it was clear that more non-DORs than DORs indicated in the baseline that they had the physical ability to meet the requirements of the unit (98 percent versus 90 percent).

In the baseline survey, roughly one-third of GCE ITF volunteers indicated that all male Marines in the task force have the physical abilities for their positions: 37 percent of male volunteers and 29 percent of female volunteers thought that all male Marines had the requisite physical ability. The remaining two-thirds indicated that

some—but not all male Marines—had the physical ability for their ITF role: 62 percent of male volunteers and 71 percent of female volunteers. Although there were differences in the proportions, male and female responses in the baseline survey were not statistically different. This changed throughout the course of the ITF (see Figure 12).

Figure 12. Perception of whether the men in the unit are physically prepared<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

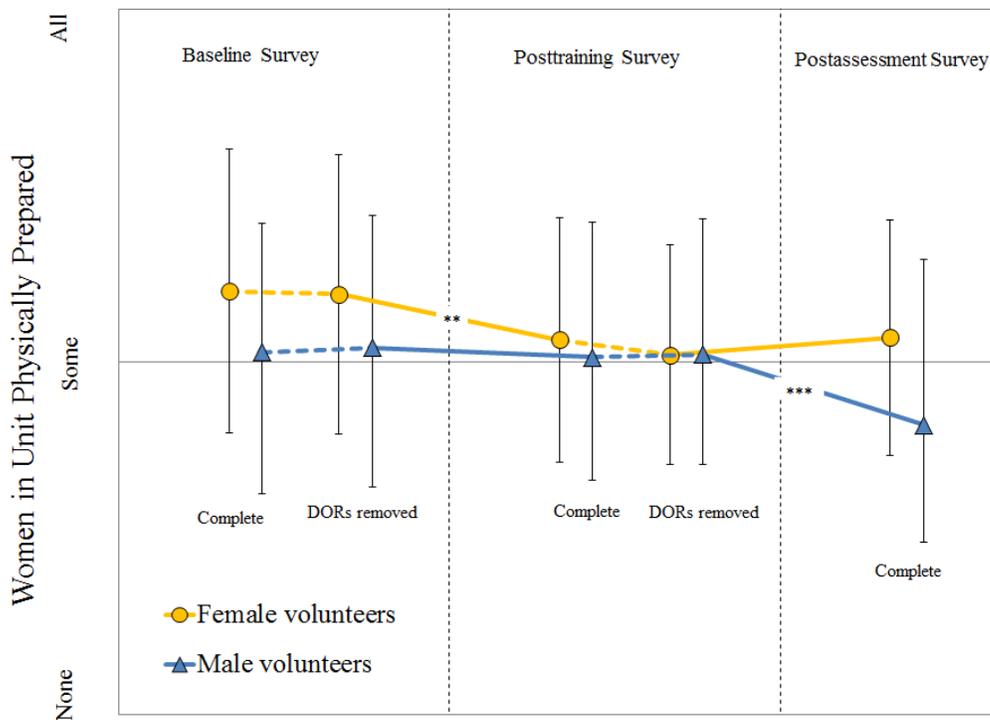
<sup>a</sup> Cross gender comparisons are statistically significant in the posttraining and postassessment survey.

The proportion of men who believed that all men had the physical ability to meet the physical requirements of the ITF remained relatively steady at 37 percent and 40 percent in the posttraining and postassessment surveys, respectively. However, the proportion of women who believed that all men had the physical strength to meet the requirements changed throughout the course of the GCE ITF, at 21 percent in the posttraining and 12 percent in the postassessment survey.

The majority of GCE ITF volunteers (86 percent of men, 80 percent of women) initially agreed that some but not all female volunteers had the physical ability for

their GCE ITF positions (see Figure 13). This proportion remained relatively stable throughout the course of the ITF. In the posttraining survey, 86 percent of women and 85 percent of men believed that some but not all women could meet the requirements; in the postassessment survey, 90 percent of women and 76 percent of men believed that some women could meet the requirements.

Figure 13. Perception of whether the women in the unit are physically prepared<sup>a</sup>



Source: CNA analysis of the Baseline, Posttraining, and Postassessment GCE ITF Climate Surveys.

<sup>a</sup> Cross gender comparisons are statistically significant in the baseline and postassessment survey.

Male and female Marines differed in their perceptions of female physical ability at the boundaries, and these perceptions changed over the course of the ITF. In the baseline, 8 percent of the male volunteers (compared with 20 percent of women) indicated that *all* the female volunteers have the physical abilities for their positions. In the posttraining survey, 11 percent of women and 8 percent of men believed that all women in the ITF had the physical ability to meet the requirements of the ITF. In the postassessment survey, 8 percent of women and 4 percent of men believed that all women had the ability to meet the requirements of the ITF. Meanwhile, in the baseline, 5 percent of male respondents (no female respondents) indicated that *none*

of the female volunteers had the physical abilities for their positions. After training, 3 percent of women and 7 percent of men believed that no women in the GCE ITF had the physical strength to meet the requirements of the ITF. After the assessment, the male opinion of the female ability in the ITF significantly diminished, with 21 percent of men and 2 percent of women believing that no women had the ability to meet the requirements of the ITF.

With a few exceptions, female volunteers did not oppose assignment of physically capable female Marines to ground combat units or ground combat PMOS schools, whereas a proportion of male volunteers somewhat opposed (11 percent in the baseline) or even strongly opposed (13 percent in the baseline) those assignments of female Marines regardless of their physical abilities. The proportion of men opposing assignment of physically capable women to ground combat PMOSs grew throughout the course of the GCE ITF, with 15 percent somewhat opposing and 17 percent strongly opposing in the posttraining survey and 15 percent opposing and 29 percent strongly opposing in the postassessment survey. We also note that physical strength concerns were common in free-text comments, although several noted the need for a common standard rather than a prohibition against women in specific PMOSs or roles.

In addition, a lower percentage of DORs initially supported physical screening tests in the baseline for both men and women for ground combat PMOSs (77 percent DORs versus 87 percent non-DORs). Furthermore, DORs are less likely to support women in ground combat PMOSs who can meet standards (47 percent of DORs support versus 73 percent of non-DORs). Similarly, non-DORs were more in favor of standards for service in ground combat units (82 percent of non-DORs versus 67 percent of DORs) and of women serving in ground combat units (67 percent of non-DORs versus 48 percent of DORs). Therefore, we can attribute these changes in male support for physically qualified women to serve in ground combat PMOSs over the course of the ITF as true changes in opinion and not changes resulting from sample attrition.

## Focus group themes

We asked both ITF volunteers and leadership about the performance of women in integrated units during training and during the assessment phase. In general, male volunteers expressed concern that performance standards would be lowered based on their ITF experiences. Several volunteers noted that unit physical training (PT) was slowed down and reduced in rigor for the entire platoon because women could not keep pace with a normal PT workload, reducing readiness and fitness of the entire group. In addition, male volunteers suggested that training intensity also was lowered to keep the women from dropping out of the GCE ITF because there was so much concern with DORs.

Male volunteers from several units further noted that women struggled with the physical strain of the job even with short days and under favorable conditions. Male Marines expressed concern that female Marines would be unable to do the job under the more difficult circumstances of combat training workups and felt that the ITF was not a true test of whether women were capable of doing the job. They noted that, although male Marines new to the MOS often start out challenged by the physical demands, they tend to build muscle and conditioning much more rapidly. Furthermore, many male volunteers felt that most women would not be capable of the physical jobs in ground combat MOSs based on body composition, making gender-neutral standards critical.

Some women indicated that they wished that they had been pushed harder to physically train because they felt that upper-body strength was extremely important for many tasks. This was something that they wanted to train to improve because they were not naturally as strong as the men. When they requested that more strength training be added to PT, these requests usually were not incorporated into the training program.

Female volunteers expressed concerns that the current female height and weight standards did not allow them to develop the muscle mass they needed to do GCE jobs and still conform to standards. Many of them had to ignore the weight range that the Marine Corps allowed in order to be competent in their jobs. Male volunteers stated that female volunteers shared with them that the School of Infantry did not prepare them physically for the GCE ITF challenges.

Leadership noted two important challenges that they thought would significantly degrade battlefield performance. The first significant challenge observed was women's difficulty with casualty evacuation (CASEVAC); the second was hiking under load, with women's times significantly slower than men's. Leadership indicated that another challenge for Weapons Company was women shifting weight to stronger men on hikes, which bred frustration and resentment among men who felt that the women were not doing their share. Leadership pointed out that over time and in combat scenarios, this frustration might spread and degrade cohesion and morale.

Both male volunteers and ITF leadership, however, said that there were some women who performed well and who would be welcome in their GCE units. Male volunteers and leadership noted that these female volunteers distinguished themselves in terms of exceptional motivation, mental toughness, and physical fitness. They stressed that the Marine Corps needs to implement gender-neutral standards for integration to be successful.

Many of the ITF volunteers and leaders pointed out that differences between male and female performance could be partially attributed to men having more MOS experience. They noted that GCE ITF female volunteers had been trained in their relevant ground combat MOSs at the schoolhouse, but they had not spent any time in

the GCE community before volunteering for and participating in the GCE ITF. They stressed that, if integration is to occur, it will be necessary to implement gender-neutral physical standards that are applicable to performing the jobs. Further, they felt that allowing men or women to enter these fields without the requisite strength would lead to more injuries and weaken operational units. Some leaders believed that the current difference in male and female standards reduces combat effectiveness and engenders resentment, suggesting that PFT and CFT standards for men and women, at least in the ground combat PMOSs, should be the same.

Likewise, female volunteers indicated that they needed more strength training and that they would have performed better if they were stronger. We also learned in the female volunteer focus groups that some of the women devoted considerable extra time to strength training.

## Implementation issues

The themes expressed in both the surveys and the focus groups about female physical preparation for combat PMOSs and units have several implications for implementation of gender integration in these units.

First, men and women need to train to the same level and be held to the same physical standards. Creating gender-neutral PFT and CFT scores for GCE PMOSs could act as a forcing function to carry out these objectives. Developing gender-and MOS-specific physical fitness training programs would also provide another means for giving all Marines an opportunity to do well.

Subpar levels of physical performance should not be tolerated by either men or women in the units. This prevents the unit from realizing its full potential; weaker Marines are not pushed to improve, and stronger Marines are held back in their training as the training benchmark is degraded by weaker Marines. In addition, this forces stronger Marines to carry more than their share of the physical burden, depending on the level of physical demand of a particular mission, and that can have negative consequences.

## Living quarters and conditions

Most volunteers and leaders felt strongly that men and women in ground combat units should share living quarters to preserve unit cohesion and morale. Both male and female volunteers noted that, during their time in Bridgeport for the assessment phase, they had to be separated by gender in the living quarters because the barracks only had communal showers. The volunteers reported that, prior to Bridgeport, cohesion and morale was high but that gender separation was detrimental, leading to

degradation in cohesion and morale that carried over to the field. ITF leaders opined that the Marine Corps needs to get to a point where men and women can professionally live and shower together and that the mindset that Marines cannot behave professionally in an integrated environment should not be an argument against integration. GCE units should live and train together. Living quarters' decisions could potentially have implications for facility and barracks configurations.

Alternatively, some volunteers and leaders said that spouses of ITF volunteers were not comfortable with male and female volunteers sharing living quarters and were concerned this could have a negative effect on marriages. While some units reported no problems with improper relationships between married Marines, other units indicated that improper relationships had occurred. Some felt that these improper relationships were leading to failed marriages, while others felt that these relationships were symptoms of marriages that already had problems. The consensus from the focus groups—both male and female—was that improper relationships in the unit were not only detrimental to a Marine's personal relationships but also had a negative effect on unit cohesion and morale.

## **Other concerns of female volunteers**

### **Survey results**

Two additional questions for only female volunteers asked about concerns they would have if they were to be assigned in support of a GCE unit or were to serve in a combat arms PMOS. There also was a free-text field for mentioning additional concerns. Several respondents used the free-text space to note longer term concerns about resiliency to injury and stress.

Response patterns were similar for the two questions, and most did not change significantly through the course of the ITF. The preponderance of female volunteers (44 to 98 percent) indicated that most issues were not a concern. Specific issues that did raise concerns for a large proportion of respondents were doing a good job and whether they have the physical strength for the role that they would fill, particularly with regard to classification in a ground combat PMOS.

Concerns about physical strength increased through the course of the ITF (“very concerned”: baseline, 11 percent; posttraining, 17 percent; postassessment, 25 percent). The concern about not being able to do a good job decreases in both “not a concern” and “very concerned” but an increased proportion of “slight concern” responses (baseline, 25 percent; posttraining, 27 percent; postassessment, 39 percent). Other concerns decreased over time, such as the prospect of being the only

woman in the unit (“not a concern” rose from 59 percent in the baseline to 80 percent of respondents in the postassessment survey).

In several cases, particularly the “fitting in” questions, such as how they would be perceived by male peers, concern dropped between the baseline and the posttraining surveys, but then increased in the postassessment survey. The strongest example, the response to “Fitting into the unit: Not a concern” was selected by 56 percent in the baseline survey and 69 percent in the posttraining survey but then dropped back to 55 percent.

Concern over sanitation and hygiene fell over time, in part due to change of opinions, but also because a higher percentage of female Marine DORs than non-DORs said that personal hygiene/sanitation was a concern when serving in GCE units (14 percent of non-DORs versus 35 percent of DORs). However, the survey does not ask specifics about which aspects of hygiene and sanitation concerned them, and respondents did not provide amplifying information in the free-text fields. In addition, a higher percentage of DORs were concerned that being in a combat PMOS would cause them to have to suppress their femininity (14 percent of non-DORs versus 29 percent of DORs).

## Focus group themes

### *Acceptance and the opportunity to succeed*

In the focus groups, female volunteers expressed a variety of concerns about their ITF experiences, as well as suggestions for women interested in combat MOSs. First, some female volunteers were concerned about women in the operating forces being accepted by male Marines and leadership. They reported that, although many of the male volunteers and ITF leaders were welcoming and supportive, others were not. They felt that women in GCE units would face strong resistance, at least initially. For this reason, female volunteers noted that women in combat MOSs would need to display both physical and mental toughness in order to be accepted by GCE Marines. They said that it was critical for women in combat MOSs to have a “thick skin” and to not take reproach to heart.

In addition, female volunteers expressed concerns that, if a female Marine was not able to complete a task or a job immediately, she would be relegated to less demanding positions and not given another opportunity, which could have potentially damaging effects on her career.

### *Better fitting gear and right kind of physical training*

Many women also expressed concerns about life in a combat unit, subsequent wear and tear on female bodies, and physical injuries over time. This concerned stemmed,

in part, from ill-fitting gear in the ITF. They noted that better fitting gear for female Marines was critical to preserve their bodies and preventing injuries.

Some women also said that they didn't feel they were trained most effectively while in the ITF. For example, some women noted that, although they needed to build upper-body strength, PT typically was focused on running and cardiovascular fitness. They noted that physical training should be based on the types of strength needed in a particular combat MOS.

### *Female height and weight standards*

Female volunteers in the GCE ITF expressed concerns about the current female height and weight standards. This physical standard is very different from gender difference for the PFT/CFT. Many noted that the height and weight standards were developed when female Marines mostly served in administrative positions and that the standards need to be updated. Some female volunteers indicated that they would eat very little to try to stay within the female weight standards, and this caused them to become faint and weak during training. Other female volunteers indicated that they currently exceeded weight standards because they were eating more calories in order to maintain strength throughout the ITF and that they needed this strength for such tasks as carrying rounds and opening a tank hatch.

The women in the GCE ITF felt that female Marines in combat PMOSs will need to weigh more to be able to successfully complete many tasks and that forcing them to conform to the current height and weight standards was putting their health in jeopardy and increasing their risk of injuries.

### *Female mentorship*

Some female volunteers felt that it was important that senior female Marines be present in integrated combat units to provide leadership and mentorship to junior female Marines. These women felt that a senior female presence was necessary so that other women in the unit could go to them with problems or concerns. Other female volunteers, however, noted that mentors are important, but they did not feel they needed a female mentor because they felt comfortable going to a male mentor in their unit.

The majority of female volunteers raised concerns about having only one or two women in a combat unit, stressing the importance of having several female Marines in a combat unit together. Many female volunteers felt that having only one or two women in a GCE unit would be very difficult on female Marines, particularly junior women. They expressed concerns over safety and the risk to women of sexual harassment or sexual assault in a unit with very few women.

### *Hygiene and pregnancy*

Although female volunteers did not identify hygiene or pregnancy as top concerns in the focus groups, male volunteers voiced concerns with these issues. Several male volunteers indicated that they feared hygiene issues would become a problem when female Marines were forced to spend significant time in a field environment without access to showers. Male volunteers also expressed concerns that one pregnant female Marine could disqualify an entire tank or LAV crew.

To alleviate some of these concerns, training could be provided to both male and female Marines at recruit training to inform on a variety of issues, such as hygiene and birth control. Providing this type of training will help Marines to understand the potential issues that could arise in the operating forces and in a field environment for both genders.

## Implementation Issues

This section reports our analysis of discussion and survey data relating to specific issues raised regarding gender integration of GCE units and potential solutions to those issues. This involves collating information from participant observations and experiences, but we also draw other perspectives that are worth considering as the USMC considers options of how to integrate ground combat forces.

### Female interest in ground combat PMOSs

#### Survey results

In the baseline survey, 31 percent of female volunteers said they had joined the ITF to have the opportunity to make a lateral move (35 percent of non-DORs and 25 percent of DORs). In the postassessment survey, we again asked women if they were considering a lateral move. After their GCE ITF experience, the percentage of women considering a lateral move declined to 25 percent. We note, however, that not all of the MOSs to which they were considering moving would be considered ground combat PMOSs. Of those women still considering a lateral move, 16 percent were considering moving to an infantry PMOS, with the remaining women divided between the intelligence, artillery, AAV, and public affairs PMOSs.

Although most female volunteers might not be willing to serve in ground combat PMOSs after the assessment, they were still willing to serve in ground combat units. We found that, in the baseline, 7 percent of women said that they would *not* be willing to take an assignment to a GCE unit, and by the final survey still 9 percent of women said that they would not be willing to take an assignment to a GCE unit. This indicates that there are specific aspects of ground combat PMOSs that are not desirable to women, rather than the ground combat units themselves.

#### Female Marines' interest in newly opened MOSs

Separate from the MOSs being evaluated in the GCE ITF, the Marine Corps decided to open other ground combat MOSs to women in 2014. The required congressional

notification period was satisfied as of July 16, 2014, and the gender restrictions on the following MOSs were lifted:

- 0842, field artillery radar operator
- 0847, artillery meteorological Marine
- 2131, towed artillery systems technician
- 2141, AAV repairer/technician
- 2146, main battle tank repairer/technician
- 2147, light-armored vehicle repairer/technician
- 7204, low altitude air defense officer
- 7212, low altitude air defense gunner [30]

For the enlisted PMOSs, the Marine Corps began to access female recruits for classification beginning in FY 2015 based on gender-neutral standards, individual qualifications, and the needs of the Marine Corps. Officer assignment to PMOS-7204 follows The Basic School's current MOS classification process.

As of June 26, 2015, Marine Corps Recruiting Command reported that a total of 49 female recruits had been assigned to the Combat Support (CEF),<sup>13</sup> Fire Direction and Control Specialist (CKF), and Combat Vehicle Repair (CLF) Programs Enlisted For (PEFs). Of the 49 women assigned to these PEFs, 9 had been reassigned or discharged and 40 were at varying stages in the recruit training process:

- 16 have graduated from Marine Corp Recruit Depot (MCRD) and are currently at or reporting to their MOS school
- 13 are currently at recruit training
- 11 are waiting to ship (poolees)
- 5 were reassigned out of CEF to new MOSs due to height restrictions in MOS-7212
- Less than 5 had either been discharged at MCRD or did not pass the pull-up portion of PFT (outcome was assignment to a new MOS)

---

<sup>13</sup> The only MOS open to women in the CEF PEF is 7212 (Low Altitude Air Defense (LAAD Gunner)).

The small number of women being classified in PEFs for these newly opened combat MOSs indicates a low propensity (approximately 2 percent of female recruits) of women to serve in these PMOSs at this time.

## Focus group themes

Of the female volunteers we spoke with in the focus groups, fewer than five indicated that they wanted to pursue a ground combat MOS after their ITF experience. Many noted that this was because of practical career and family concerns; some felt they were too old or too far along in their careers to start over and that a latmove would hurt their careers. Others were concerned about deploying and being away from their families for long periods of time.

Other female volunteers indicated that, although they had been interested in a combat MOS before the ITF, their experiences had caused them to change their minds. Many of these volunteers felt that their units had not been accepting of women and that this problem would continue in the operating forces. They expressed concerns over how they had been treated in the ITF and felt that the combat arms communities were not prepared for gender integration. Many of these women stated that they had been excited about the opportunity to join the GCE while at the schoolhouse but that being a part of the unit changed their opinions.

Female volunteers with an interest in a lateral move to a combat MOS generally described a very positive ITF experience and noted that, although it had been difficult at times, they felt that they had learned a lot and were pleased about the opportunity to be a part of the GCE community. These women felt that they had the physical and mental toughness necessary to be a part of a combat MOS and stressed that other women who are interested in this opportunity also must be physically and mentally tough to be able to compete with the men in these units. The women who expressed interest in a combat MOS indicated that they had joined the Marine Corps to join a combat MOS and felt excited that they finally had the opportunity to do so.

## MOS standards

The general sense of focus group volunteers and leadership was that there should be occupationally based physical standards, applied regardless of gender, for entry into ground combat MOSs. We heard consistently from male and female volunteers, as well as the leadership, that gender-neutral MOS-specific standards are critical for successful integration in GCE units. Further, the ITF leadership noted that, if the standards are established correctly, the Marine Corps will have a high probability of having the most qualified, capable Marines in those billets, a benefit to the Marine Corps regardless of integration. For male GCE ITF participants, a single PFT/CFT

standard, as well as a standard for MOS-specific requirements, could possibly ease their concerns regarding female Marines being able to accomplish some of the more physically demanding GCE tasks. For female Marine volunteers, they said that one PT standard and an MOS-specific physical standard would help to allay the impression that they are subject to a double standard.

The supporting research being conducted by MCOTEA, the University of Pittsburgh, and TECOM should provide visibility and insight into the establishment of gender-neutral MOS-specific standards.

## **Mental and emotional resolve**

A high level of mental and emotional fortitude is required to be successful in combat units and MOSs. In the focus groups, many male volunteers and ITF leadership characterized this high level of mental and emotional resolve as “the combat mindset” or a “killer instinct.” They said that this was a characteristic that they believed was lacking in most of the ITF female volunteers, and they were concerned that some women would not have enough confidence going into combat. They described many women as “freaking out” when situations became tense and shutting down and not being able to complete the mission. Leadership also said the level of stress in the GCE ITF was not the same as that exhibited in a normal combat unit. During the assessment phase, Marines did not reach the level of sleep deprivation or mission longevity that occurs in the operating forces. Because of this, ITF leadership felt that there are many unknowns when it comes to whether women have the emotional and mental resolve to serve in a combat unit because they have not been tested to the level that they would be in real-world operations.

Leadership also had a difficult time dealing with the emotional reactions of some of the women when they were being disciplined, but they acknowledged that this was something with which they had no prior experience. They noted that they would need to learn ways to be consistent when disciplining men and women despite the emotional response differences. ITF leaders also noticed that these emotional responses seemed to manifest under stress and then something unexpected would cause distress. They said that this was something that made them uncomfortable, but it was something they could learn to overcome through training.

Male volunteers and leadership noted that female Marines tended to respond with “back talk” when being yelled at in the GCE ITF. Leadership noted that this was a challenge for them to know how to address this issue because they were concerned that women might DOR. Focus group participants noted that it was not unusual for women to stop performing when being yelled at—behavior that contrasts with that of male Marines who typically respond more positively to this type of discipline. Male volunteers said that, instead of leadership being tough in situations where women

were not responding in an acceptable way, discipline broke down. They also recognized that discipline techniques for men and women differ in bootcamp. For example, they said that female drill instructors did not yell at female recruits during bootcamp in the same manner as male drill instructors. Yelling is something that Marines have to deal with in combat units. The leadership also acknowledged that some men could be emotional, so this was not a challenge unique to women. Some female volunteers also indicated that many of their peers (male and female) could not handle the pressure of the GCE ITF. These women suggested that in addition to the need for physical standards to serve in ground combat PMOSs, it also would be prudent to screen for emotional and mental resiliency of everyone volunteering for assignment to ground combat MOSs.

## Physical performance over time

Almost all GCE ITF participants—male and female volunteers, as well as direct assignment and leadership—voiced concerns about female performance. However, perceptions regarding performance differed between focus groups and units.

In many of the focus groups and survey responses, there was support for screening based on physical standards, but this was tempered with consideration of how long a Marine would maintain that standard. That is, an individual passing the initial MOS screening standards might not be in the same physical condition after a few years. This led to a case for unit- or MOS-level physical fitness requirements.

In certain cases, female physical performance was assessed on a relatively short-term timeline. For example:

- Women sometimes could not lift and carry a realistically weighted dummy from a notional point of danger to an evacuation point in a reasonable period of time.
- Women in Company B could not always open hatches and lift equipment safely, resorting to methods in which they risked injury.
- Women in infantry units could not always maneuver quickly with the weight of their combat gear; or they arrived at their position too exhausted to effectively provide covering fire for other units.

These were power and strength issues that were tested in the assessment phase. In other cases, the questions focused on endurance over a period of days. Female volunteers managed to succeed in a one- or two-hour evolution, but male Marines did not have confidence that female volunteers could maintain an acceptable

performance level for the days or weeks required of an expeditionary campaign. This was not tested in the ITF assessment phase.

Another issue raised in the focus groups was injury and resiliency over a career: Volunteers and leadership noted that overuse injuries already are a concern among male Marines through a career as they carry around heavy body armor, rucksacks, and equipment. Some male ITF volunteers surmised that female Marines would see accelerated overuse and physical stress injuries, increasing the eventual costs and decreasing the return-on-investment of their training.

Similarly, some female volunteers expressed concerns over the wear and tear on their bodies over time from life in a ground combat unit or PMOS. Many female NCOs who were in their mid- to late-twenties felt they were “too old” to withstand the physical challenges of a combat unit or PMOS and felt that female Marines who started their careers in a GCE unit would be more successful. Injury data being collected by MCOTEA, the University of Pittsburgh, and TECOM might provide more visibility on overuse injuries or how the female body may hold up under the strains of a GCE unit or ground combat PMOS over time.

## **“Cultural” challenges**

Focus group conversations with GCE ITF male Marine volunteers, monitors, and leadership indicated that a major difference between male and female Marines in the GCE ITF was cultural—that is, a difference between the ground combat culture and that found in other Marine Corps elements. These cultural schisms centered on topics of gender stereotyping, favoritism and punitive actions, communication and motivation styles, and emotional responses.

### **Favoritism and punitive actions**

Many male focus group participants felt that leadership tended to favor the women, and female volunteers conversely thought there was favoritism toward the men throughout the GCE ITF assessment phase. Male Marines noted that, if they (male Marines) made mistakes, they were expected to “know better,” whereas female Marines were allowed more “slack.” Female Marines felt that they were berated harshly by leadership for not knowing certain things even though they were new to their ITF PMOS and had no experience in the operating forces. A notable exception to this viewpoint was the Engineering unit, an occupational field that already is integrated, along with the members of the provisional infantry unit, all of whom have non-ground-combat PMOSs. Engineering Company volunteers reported no gender favoritism during the assessment.

## Communication and motivation styles

Both male and female volunteers provided focus group feedback indicating that female Marines did not respond well to ITF SNCO and small unit leadership communication and motivation styles. Although leadership styles vary by individual, there was clear indication from all Marine feedback (male and female) that female Marines did not respond positively to leadership shouting to correct errant behavior or poor performance.

Male Marines tended to feel that female GCE ITF volunteers were more difficult to motivate than their male counterparts. This sentiment also was raised by senior leadership. Whereas many Marines felt that shaming a male Marine for not performing a particular task operation correctly often resulted in that Marine wanting to perform better, some female Marines were described as “crying and shutting down” emotionally when corrected.

Female volunteers’ feedback, although expressed from a different point of view, also indicated that they sometimes disregarded or ignored harsh motivational communication styles. Some male Marines believed that, while coarse language “rolled off their backs”, the same language was taken personally by the women. In comparison, male and female volunteers and leadership from the Engineering Company reported no differences between female and male Marines with regard to being motivated and how they responded to corrections and orders.

Several senior Marine leaders noted that they were less comfortable taking vocal corrective action with female Marines than with male Marines. In focus groups and interviews, male Marines explained that they were “raised a certain way” and taught “to speak to women in a certain manner.” Several senior leaders felt that they could not effectively reinforce or correct female Marines because they could not speak to females with the same urgency and tone as they would with male Marines.

## Leadership issues

During our interviews with the ITF leadership, participants discussed the adjustments that future GCE leadership will need to make while learning to lead women for the first time. ITF leadership members reiterated that female Marines do not always respond to being disciplined in the same way as male Marines, and that this will cause some women to shut down. They felt that leaders should have the tools to adjust their leadership styles based on individual Marines. Leadership also noted that it is the responsibility of every unit leader to know their Marines and what effectively motivates them. However, this expectation may be challenging for young

NCOs who are small-unit leaders and do not yet have the experience to collect “the tools” needed to support an effective leadership style.

It was mentioned that leaders of future integrated units will need to learn to be “comfortable with being uncomfortable” and with making mistakes, and they cannot be afraid of change. It also was noted that leaders must always remain consistent and fair to both men and women in their charge. As the Marine Corps moves forward with integration, it should consider developing leadership training to address different leadership styles and how to motivate individual Marines.

## Latmoves

During the focus groups, volunteers and leadership both addressed the idea of women making latmoves into combat MOSs versus women joining the MOS at the entry level and growing in the community. In general, both volunteers and leadership felt that latmoves for women into combat MOSs could be a problem. They felt that it had been difficult for female NCOs in the ITF to get up to speed on the requisite MOS skills fast enough to be leaders. The tension between needing to learn a skill quickly and wanting to be a leader created issues with female NCOs and junior male Marines, as well as discipline problems. As noted previously, many felt that, if female Marines were raised in the combat community, the discipline problems and tensions experienced in the GCE ITF could likely be alleviated.

Proponents of female Marines joining combat MOSs from the beginning also pointed out that, in addition to the discipline practices that are learned in ground combat units, there is a general culture and mindset in many of these units that has to be learned and experienced over time. They stated that Marines must be raised in the combat community to truly understand the ground combat culture and be proficient in the MOS. In particular, senior leadership said that they would strongly advise against latmoves of female Marines into the 0311 MOS. They felt that with this MOS, in particular, female Marines will need to be in the MOS from the start of their careers in order to be successful.

Most female volunteers were not interested in a latmove to ground combat MOSs. Female NCOs in particular felt that “starting over” by laterally moving would be detrimental to their careers. They added that they were frustrated during the ITF because they were not able to learn the new MOS skills quickly enough to be unit leaders.

The Marine Corps will need to carefully consider if female latmoves will be allowed into all ground combat units. Regardless of the decision whether to allow or prohibit latmoves, the issue of female leadership and mentorship in these units will need to be addressed. How will senior women be present to lead and mentor junior female

Marines without latmoves? If latmoves are not permitted, the Marine Corps will need to assign senior enlisted female Marines in non-ground-combat PMOSs to these units so that female Marines will have other women to look to for mentorship if they wish to do so.

## Relief structure

Most male volunteers and directly assigned Marines felt that female volunteer performance placed the average woman into the bottom 5<sup>th</sup> or 10<sup>th</sup> percentile of a GCE victor unit, and that they would be treated accordingly. Since there are already male Marines in that category, we asked about mitigations for poor performers. Marines noted that poor performers are frequently relegated to unit positions that are not operational—“tankers without a tank” or clerks in company headquarters.

These nonoperational positions are not in the unit’s table of organization, but they serve an important purpose by providing a “relief valve” to prevent incompetent, poor-performing, or unsafe Marines from creating a risk to mission effectiveness or the safety of others. This relief structure issue was an acute concern in Weapons Company: male volunteers and unit leadership did not think that women would be effective in Weapons Company, and they did not have the relief structure in their platoons to relegate poor performers.

However, in certain units, such as artillery, there was confidence that, if a female Marine assigned to the company was competent and increased the firing rate of the gun (a point of pride in that community), she would be put into an operational role. Several artillery male volunteers pointed to some women in the ITF who would make that cut.

## Challenges for spouses

Marines’ spouses in newly integrated units may experience challenges and concerns that they did not have before integration. The preparation for, separation during, and readjustment following deployments already places stress on marital and family relationships. Close working relationships and integrated living quarters in the field could potentially cause marital stress.

In the open-ended survey responses and focus groups, some volunteers noted that spouses of ITF volunteers were not comfortable with male and female volunteers sharing living quarters and felt this was having a negative effect on marriages. Although some units reported no problems with improper relationships between married Marines, other units said that there were improper relationships and that

these relationships were leading to failed marriages. Some male volunteers also said that members of ground combat units are typically very close; while they normally counsel and support other unit members, they felt that they could not be supportive of female Marines in their units without causing spousal conflicts.

Informational resources or counseling may need to be provided to members of integrated units and their spouses, emphasizing that communication and healthy relationship skills are important to help couples manage this stress. GCE leadership also should be prepared to speak with spouses of unit members to help alleviate their concerns. Although this may be a challenge for integrated combat units initially, spouses will likely adapt and concerns will lessen as integration moves forward.

## Recommendations

Based on the findings from the surveys and focus groups and the perceptions of male and female GCE ITF volunteers and leadership, we recommend several actions for the Marine Corps to consider. First, we outline recommendations for the Marine Corps as it moves forward with the integration of female Marines into ground combat units. We also provide recommendations for the Marine Corps to consider that will have utility across all MOSs and units, not just ground combat MOSs and units.

### For integration

#### Implement gender-specific MOS-fitness development training

Because male and female physiology differs, the Marine Corps should implement gender-specific fitness development programs for Marines in ground combat MOSs. These programs should begin when a male or female recruit indicates interest in a ground combat PEF and is in the delayed entry program (DEP), and they should continue into bootcamp, through MOS school, and in the fleet.

#### Provide leadership training

The Marine Corps should consider providing additional gender integration training to GCE unit leadership. Based on our interviews with leadership in the GCE ITF, this training should highlight the following ideas:

- Standards will not change as a result of integration; any gender-neutral standards that are established will be followed and not compromised.
- Leadership must emphasize to Marines the need for professionalism at all times.
- The performance expectations for every Marine will be the same.

- Leadership will need to balance treating all of their Marines fairly and equally with the understanding that the same discipline methods may not be effective for all Marines.

## Begin integrating aspects of recruit training

As the Marine Corps moves forward with gender integration, consideration should be given to beginning some aspects of integration at recruit training. Leadership could decide which aspects are most easily integrated; some suggestions include academic classes and the Crucible. Doing so would accomplish the following:

- Expose male Marines to female Marines, eliminating the “fear of the unknown” experienced by male ITF Marines.
- Expose both male and female Marines to the same standards of discipline, potentially alleviating some of the discipline problems experienced with female ITF volunteers.
- Expose male Marines to female drill instructors, helping male Marines become accustomed to taking orders from senior female Marines.

During recruit training, training also could be provided to inform Marines on a variety of issues, such as hygiene and birth control; providing this type of training will help Marines to understand the potential issues that could arise in the operating forces and in a field environment for both genders. Further, this type of training would help to educate both male and female Marines on some of the concerns and issues that arose from the survey and focus groups. Men specifically expressed concerns about female hygiene in the field and combat environments as well as concerns about pregnancy and how that would affect a unit; women did not.

## Update height and weight standards for female Marines

The Marine Corps should consider reexamining the height and weight standards for women across the Marines Corps, but particularly in ground combat units and PMOSs.

In the focus groups, many women noted that the height and weight standards were developed when female Marines largely served in administrative positions and that the standards need to be updated. Some female volunteers indicated that they would eat very little to try to stay within the weight standards for women, and this was causing them to become faint and weak during training. Other female volunteers indicated that they were exceeding the weight standards because they were eating

more calories in order to maintain strength throughout their ITF time; they stressed that they needed this strength for physically demanding tasks, such as carrying rounds and hiking under load.

Female Marines in combat PMOSs may need to weigh more to be able to successfully complete many tasks, and the standards should be adjusted accordingly. Otherwise, forcing women to conform to current height and weight standards could put their health in jeopardy and increase their injury risk.

## Obtain proper-fitting gear for women

Most women in the focus groups indicated that the gear they wore in the GCE ITF did not fit properly, leading to additional wear and tear on their bodies. They also said that the ill-fitting gear often slowed them down during tasks because they often had to stop and adjust it. Gear designed for women will be necessary to ensure successful integration implementation.

## Establish a minimum number of female Marines to be assigned to a GCE unit

The Marine Corps will need to determine the minimum number of female Marines that will be assigned per ground combat unit to address safety, comfort, and mentorship concerns. The focus group discussions highlighted that female Marines and leadership believe that a GCE unit needs a certain number of women; this allows for the women to provide support to one another and to help alleviate concerns for their safety and fears of sexual harassment or sexual assault. It is not clear what the minimum number of women in a GCE unit should be; female Marines we spoke with felt that “at least 2 or 3” women should be in a GCE unit, while the battery leadership suggested a minimum of 10 percent of the unit/battalion/platoon.<sup>14</sup>

## Integrate living quarters

The Marine Corps also will need to consider how to best integrate the living quarters for ground combat units and how to update facilities to accommodate both men and women. The focus group discussions highlighted the need to keep units together in living quarters to preserve and promote unit cohesion and morale; they noted a negative effect on unit cohesion experienced from separating men and women in the

---

<sup>14</sup> MCFIO leadership noted that the Marine Corps is considering what the minimum number of women assigned to a GCE unit should be.

living quarters during parts of the GCE ITF. Leadership must emphasize that male and female Marines must learn to share living quarters professionally.

## **For the Marine Corps, in general**

### Develop gender-neutral MOS standards and training

Regardless of integration, the Marine Corps should develop gender-neutral MOS specific standards. We heard consistently from male and female volunteers and leadership that gender-neutral MOS-specific standards are critical for ground combat units and PMOSs and that these standards will be useful regardless of integration.

ITF leadership also noted that physical training plans must implement functional tasks associated with the specific MOS in a phased and methodical manner and that Marines in ground combat units and PMOSs need a regimented physical training program that focuses on the specific type of body strength required for the tasks associated with the MOS (i.e., functional fitness).

Leadership stated that the most critical integration piece will be to determine the correct gender-neutral MOS-specific standards and enforce them. They noted that, if the physiological and mental standards are established correctly, they will have a high probability of having the most qualified, capable Marines in those positions.

### Develop training measures to improve mental and emotional resolve

The Marine Corps also should consider developing training measures that could improve Marines' mental and emotional resolve. Mental and emotional resolve is required to be a successful member of a ground combat unit. Such training would be beneficial to ground combat units, regardless of integration.

### Revisit PFT and CFT standards for men and women in ground combat PMOSs

Both male and female ITF volunteers felt that physical standards and tests (PFT/CFT) need to be reconciled for the sake of fairness and to ensure that every Marine in a ground combat PMOS is held to the same standard. Equalizing PFT and CFT scores for male and female Marines in ground combat PMOSs also will serve to ensure that the most capable Marine is promoted.

## Appendix A: The GCE ITF

In February 2014, the CMC authorized the formation of the GCE ITF, and the Assistant Commandant of the Marine Corps assigned the responsibility to design and conduct the GCE ITF's assessment activities to the Marine Corps Operational Test and Evaluation Activity (MCOTEA). In this appendix, we describe the GCE ITF mission, structure, training, exercise, and employment plan, and the assessment phase. We base our description on GCE ITF staff input and scheduling artifacts.

### Mission

According to the MCFIP campaign plan, the mission of the GCE ITF was as follows:

to assess the physical requirements associated with performing individual and collective tasks for previously closed MOSs and open MOSs in closed units and enable research and analysis on individual and unit performance including moral and cohesion in order to inform CMC decisions on integration of female Marines into previously closed MOSs and units. [4]

In fact, GCE ITF units needed to focus on two missions. The mission at hand was to complete the assessment phase where teams<sup>15</sup> performed tasks that were timed or measured, with the purpose of contributing to the development of standards (separate study). This mission included the requirement to keep volunteers in the participant pool and limit the number of DORs. But this was secondary to the general mission and purpose associated with the unit capability (see Table 4).

---

<sup>15</sup> MCOTEA's IRB-approved research protocol [11] provides details on the composition of teams by unit for the assessment phase.

Table 4. GCE ITF unit capabilities and missions

GCE ITF Unit	Mission
Company A  Rifle platoon	"locate, close with, and destroy the enemy by fire and maneuver and/or repel the enemy assault by fire and close combat" [31]
Company B  Tank platoon  Amphibious Assault Vehicle (AAV) platoon  Light Armored Reconnaissance (LAR) platoon	"close with and destroy the enemy by using armor-protected firepower, shock effect, and maneuver and to provide anti-mechanized fire" [32]  "land the surface assault elements of the landing force and their equipment in a single lift from assault shipping during amphibious operations to inland objectives" [33]  "conduct reconnaissance, security and economy of force operations, and...limited offensive or defensive operations that exploit the unit's mobility and firepower" [34]
Weapons Company  Machine gun platoon  Antiarmor platoon  Mortar platoon	"provide...heavy machine gun support, and fire support coordination in order to support the infantry battalion's scheme of maneuver" [35]  The primary mission of the antiarmor platoon "is to provide countermechanized support, utilizing the antiarmor platoon to engage and destroy enemy armored vehicles, particularly tanks" [36]  "provide immediately available, responsive indirect fires that support the maneuver of the company or battalion" [37]
Battery A	"furnish close and continuous fire support" [38]
Engineers	"enhance the mobility, countermobility, and survivability of the Marine division...specifically: Demolition, Breeching, Route clearance" [11]

Source: We cite the relevant Marine Corps doctrine references with the mission statement for each unit in the body of the table.

## Structure<sup>16</sup>

### Personnel

MCOTEA designed the task force to consist of approximately 320 Marine volunteers—both male and female Marines. In addition, there are 255 directed-assignment billets; among these are Marines who are filling GCE ITF leadership positions at various levels across the unit.

Volunteers met the following qualifications:

- Active-duty Marine or a drilling member of the Selected Marine Corps Reserve (SMCR) on active duty
- Paygrade of E5 or below
- Sergeant with less than 9 years of service (YOS) as of September 1, 2014
- A drilling member of the SMCR, eligible and available for active-duty operational support orders, funded by Headquarters Marine Corps (HQMC) beginning on or around June 1, 2014, through September 30, 2015
- Having an end-of-active-service (EAS)/reserve-end-of-current-contract (RECC) date after October 1, 2015
- Capable of completing a third-class male physical fitness test (PFT) (age 17 to 26) if female and volunteering for a ground combat MOS<sup>17</sup>

Marine volunteer participation in the research consisted of a 12-month period with:

1. An individual training phase for female volunteers classified into ground combat primary MOS (PMOSs) and attending the relevant schoolhouse training
2. A unit training period undertaken at Camp Lejeune
3. An assessment event period conducted at Twentynine Palms, Bridgeport, and Camp Pendleton—all in California

---

<sup>16</sup> We obtained information on the GCE ITF's structure from [11].

<sup>17</sup> Although Marines are required to take the PFT and the combat fitness test (CFT) each year, the volunteer qualifications did not include a CFT criterion.

Some female Marine volunteers first attended ground combat MOS schools and then were assigned to the GCE ITF. In addition, the GCE ITF included a gender-integrated provisional rifle company mission to establish the development of gender-neutral occupational standards for Marines in open, non-ground-combat MOSs assigned to GCE units.

GCE ITF Marine volunteers had the option to DOR at any time and were not required to provide a reason for doing so. Marine volunteers also were removed from the research due to injury, other medical reasons, or legal reasons. Because attrition was expected, MCOTEA selected more Marine volunteers for the GCE ITF than needed. In Table 5, we show MCOTEA’s starting number of randomly selected volunteers by unit membership and gender. By November 2014, almost all volunteers had checked into the GCE ITF and workup training had begun. There were 369 Marine volunteers—275 men and 94 women—present and accounted for at the unit; 17 Marine volunteers—9 men and 8 women—had not yet reported, and the remaining had DORed.

Table 5. MCOTEA’s initially targeted GCE ITF volunteer population, by occupational assignment and gender

GCE ITF occupational assignment	Marine volunteers		Total volunteers
	Men	Women	
Infantry	214	127	341
Provisional infantry	53	23	76
Total	267	150	417

Source: Approved Institutional Review Board Document. May 2014 Revision #1. *Ground Combat Element Integrated Task Force Experimental Assessment Plan*.

## Subordinate units

The GCE ITF consists of a headquarters element with five subordinate units: an engineering platoon, three companies, and Battery A.

- **Company A** was divided into three platoons: two rifle platoons manned by Marine volunteers with the 0311 MOS, and a provisional infantry platoon of Marines from various MOS backgrounds who have been trained in infantry skills.
- **Company B** had three armored platoons: Tank platoon, LAR platoon, and amphibious assault vehicle (AAV) platoon manned with Marine volunteers with the 1812, 0313, and 1833 MOSs, respectively.
- **Weapons company** also had three platoons with Marine volunteers having one of the following MOSs: Machine guns (0331), antiarmor assault (0351, 0352), and mortars (0341).

- **Battery A** was the artillery component of the GCE ITF, consisting of Marine volunteers trained in the 0811 MOS.
- **Engineers** (volunteers having MOS-1371) made up a platoon within Headquarters and Support (H&S) Company that provided combat engineering support within the ITF.

All subordinate units were integrated with volunteer populations whose composition ranged from 18 to 45 percent female (see Table 6).

Table 6. Baseline distribution of GCE ITF Marine volunteers, by subordinate unit and gender

Unit	Volunteers <sup>a</sup>		Percent women	Key function/MOS
	Men	Women		
<b>Company A</b>	<b>84</b>	<b>19</b>	<b>18.4</b>	<b>Infantry</b>
Rifle (two platoons)	48	9	15.8	0311
Provisional	36	10	21.7	Any
<b>Company B</b>	<b>49</b>	<b>20</b>	<b>29.0</b>	<b>Armor</b>
Tank platoon	18	3	14.3	1812
LAR platoon	14	7	33.3	0313
AAV platoon	17	10	37.0	1833
<b>Weapons Company</b>	<b>26</b>	<b>21</b>	<b>44.7</b>	<b>Maneuver support</b>
Machine gun platoon	6	7	53.8	0331
Antiarmor platoon	6	6	50.0	0351, 0352
Mortar platoon	9	4	30.8	0341
<b>Battery A</b>	<b>28</b>	<b>12</b>	<b>30.0</b>	<b>0811</b>
<b>Engineers</b>	<b>19</b>	<b>9</b>	<b>32.1</b>	<b>1371</b>

Source: Marine Corps Operational Test and Evaluation Activity GCE ITF Marine volunteers' roster as of Nov. 2014.

<sup>a</sup> Due to attrition, the numbers of volunteers changed over the course of the GCE ITF. This table reports volunteer numbers as of Nov. 2014, the time period corresponding with CNA's administration of the baseline climate survey.

The GCE ITF units were manned with direct assignments and volunteer male Marines from the respective MOS for the unit, and with volunteer female Marines from a variety of MOSS, who attended the PMOS school for the role they would fill in the GCE ITF. There were two exceptions: (1) the provisional infantry platoon that was manned by male and female volunteer Marines from a variety of noninfantry communities and (2) the engineering platoon, where the 1371 Combat Engineering

MOS is already open to female Marines, although they have not been eligible for assignment to combat engineer battalions aligned with infantry divisions.

## GCE ITF training, exercise, and employment plan

We obtained the training, exercise, and employment plan (TEEP) from the GCE ITF Operations shop and discussed the training program with unit leadership. In addition, we compare the GCE ITF TEEP with TEEPs from corresponding ground combat units at Marine Expeditionary Forces to understand the differences between the typical infantry training program and the GCE ITF's training programs. Here we summarize the design and focus of the training, and discuss how this training program differs from a standard GCE training regimen.

### GCE ITF training period

The GCE ITF TEEP began September 2014 with formation of the headquarters element and initial consent briefings. Unit training started the first week of October, with almost all units spending a week to assess personnel and provide remedial skills training. The workup/training phase ended in mid-February, with a week to prepare for embarkation and the movement of personnel to Twentynine Palms.

The October to February period had seven federal holidays, and both Christmas 2014 and New Year's 2015 fell mid-week. These breaks effectively dropped the available training days from 95 days (19 weeks) to 80 days. Training also was interrupted for GCE ITF research data collection activities, distinguished visitor and media visits, and a safety stand-down in late December.

However, GCE ITF Marines were *not* required for showcase events, such as fleet weeks, changes of command, and unit assessments (e.g., logistics chain analysis team inspections) that require substantial preparation, drill, or rehearsal time. Company and platoon leadership noted that there were *fewer* distractors during the training phase than expected for a unit in the operating forces, and this allowed the Marine volunteers to focus on training.

All GCE ITF subordinate elements followed a pattern each month of several weeks in garrison focused on academics, followed by a week of field or live-fire training. This pattern matches the pattern seen in MEF unit TEEPs, although the GCE ITF pattern was more intensive with less "white space" and shorter academic/field stints. For example the GCE ITF LAR platoon used two short (2- to 5-day) field training periods for training 25mm and individual-level tasks when, according to the platoon leader, a

LAR platoon in the operating forces would spend 2 weeks in the field to train each task.

We show the number of unit training days by training type and unit in Table 7. Elements traded off time between academics, field, and live-fire training. Engineers spent the most time in academics (63 percent of the training days) and the least on live-fire (10 percent); the battery spent the least amount of time in academics (34 percent) and the most in live fire (37 percent).

Table 7. GCE ITF subordinate unit training days, by training type

Unit	Admin	Academics	Field	Live fire	Hikes	Total
Company A	10	41	3	22	10	82 <sup>a</sup>
Company B	10	44	14	11	2	81
Weapons Company	10	42	6	21	2	81
Battery A	10	27	12	29	1	79
Engineers	10	51	7	8	5	81

Source: GCE ITF TEEP.

<sup>a</sup> Company A incorporated hikes into live-fire or field events.

## Personnel considerations

Not all GCE ITF volunteers were available at the beginning of the training phase because they were still attending MOS schools. This was particularly true of women in Bravo Company and for some men who volunteered as replacements for males DORs.

By design, there were disparities among personnel in experience and proficiency. Except in Company A's provisional infantry platoon, male volunteer Marines were working in their MOSSs, often with several years' experience. Their female Marine volunteer counterparts had experience as Marines but only had attended their ground combat MOS schools and did not have any operating force experience.

In addition, each subordinate unit had a different manpower mix: some were predominantly made up of active component Marines, whereas others had large numbers of activated reservists. For example, half the male Marine volunteers in

Weapons Company were reservists who did not have recent full-time active-duty operating force experience.

One way to think about the mix of volunteers' experience levels is that their experience mix replicated that typically found in a GCE unit. Several company and platoon leaders also noted that Marine volunteers' lack of experience also meant that they had no bad habits to overcome.

Company and platoon leaders noted that, in general, Marines were motivated by the GCE ITF mission. However, there were unique challenges associated with the GCE ITF's "human subjects research" approach, which allowed any volunteer to DOR at any time with no reason required. For example, Weapons Company experienced a relatively high number of male Marine volunteer DORs during the training period, which leaders reported negatively influenced the company's training intensity.

Another challenge for leadership involved reconciling scores on Marine volunteers' fitness reports (FITREPs). The GCE ITF wrote FITREPs for E-5s and above: But how do you score a Marine in the provisional infantry who might be, for instance, an excellent truck driver but is not an excellent rifleman? Unit leadership noted that they had to make an effort when writing FITREPs to ensure that Marines' careers were not derailed based on a poor GCE ITF performance in an MOS that was not the Marine's normal MOS.

## Program design

During deployment workups, units' military training programs are tailored to the upcoming mission. Before the training phase, GCE ITF leadership studied the GCE ITF mission and requirements for unit assessments during the ITF's deployment phase. Using this information, they tailored their respective unit training programs to prepare individuals and small groups to perform MOS and element tasks.

### *Resources*

The GCE ITF training phase was time-limited, but the Marine Corps provided ample ammunition and ordnance to the unit so that Marines could hone individual skills. GCE ITF units had priority for ranges to exercise gunnery, cache reduction, and other live-fire skills, providing an intense training period in a short time.

### *Focus on the basics*

Company A and B unit commanders focused intensively on tasks in the training and readiness manual (T&R) from the individual (1000/2000) level to the collective and squad (3000/4000) levels. Standard operating procedures below the division level require combat engineers to work as small teams, so the training in the Engineering platoon also was limited to T&R 4000-level tasks.

The focus on individual and small element tasks in these subordinate units was one of the primary differences between GCE ITF training and how equivalent operating forces units train. The individual-level training in operating force units takes place before most of the officer and staff noncommissioned officer (SNCO) leadership who will deploy with the unit are in place, and it generally lasts about a month rather than the four months available to GCE ITF units. Leadership interview feedback noted that leaders were provided with ample opportunity to spend longer time periods—up to several weeks—to focus on individual skills.

As an operating force unit moves through its training phase, the emphasis transitions from individual- and squad-level tasks to platoon- and company-level tasks where the focus is on decision-making by junior officers. In the GCE ITF, junior officers reported that they and their SNCOs were available from the start and were more involved in the intensive training of the volunteers. In their opinion, this freedom to teach rather than be tested provided unit leadership with greater opportunities for mentoring and more effective basic skill training.

### *Advanced training*

The missions of the Weapons Company and the Battery are to provide support to a platoon or company-level operation; so, at the margins of their respective training programs, these elements trained to some 5000/6000-level tasks. For other GCE ITF units, the *academic* training included the platoon level and higher tasks, such as infantry integration with Company B's armor unit (to provide context for the squad level tasks and to keep volunteers interested), but these were excluded from field training.

Most company leadership told us that they devoted some time to cross-training their Marines on within-unit tasks. To some extent, this was required for the assessment phase when company members could be selected to fill any role. All Company A members were trained for all infantry roles. Company B vehicle crews were trained to work in multiple vehicle stations. The result was that companies devoted more time to train their Marines in each potential job in their respective units vice one job. For example: the LAR platoon trained 16 Marines in gunnery rather than 4, but the unit received ammunition and range time to support this training.

### *Skills not trained*

Military leaders at all levels perform mission analysis and train to the specifics that they expect to encounter; they typically do not train to capabilities that they do not expect to support or those that are not feasible to execute. The GCE ITF was no different: in each element, the leadership omitted training certain skills or tasks based on their understanding of the assessment phase mission.

Some of the omitted training tasks are part of the unit's (or MOS's) core mission. In Weapons Company, for example, the combined antiarmor platoon did not shoot weapons from vehicles because this skill was not part of the assessment. In the LAR platoon, the assessment targeted training to MOS-0313 skills, vice MOS-0311 scout skills. Integrated unit activities, such as dismounted skills or combined arms, were limited to squad-sized drills.

### *Environment*

Training took place at sea level, during a cooler time of the year in North Carolina. In January, the average low is 34 °F, while the high reaches 55 °F. The flat terrain and lack of heat facilitated training and made the hikes less challenging.

The subordinate units did not train to night missions; several slept in the field, but night maneuver or operations were not included in the mission analysis of the assessment phase.

## **Assessment phase**

The goal of the GCE ITF assessment phase was to assess the effects of gender integration in previously open and closed MOSs on various measures of readiness and mission success within closed GCE units. Here we discuss details of the GCE ITF assessment, deviations in protocol, and artificialities as they relate to the GCE ITF assessment.

To investigate these potential effects, MCOTEA evaluated the physical performances of Marine volunteers in the execution of collective and individual tasks within a pseudo-operational environment. Measures of readiness and mission success for the MOSs included fatigue, physical capacity, and task and workload performances. The assessment focused on three broad research objectives:

1. Measure mission effects at various levels of gender integration in closed MOSs.
2. Measure mission effects at various levels of gender integration in open MOSs within closed units.
3. Identify physical characteristics that correlate to individual readiness, proficiency, and conduct.

The first two objectives of the GCE ITF focused on Marine collective task performance, whereas the third objective focused on individual characteristics. Closed MOS units were represented by Infantry (MOS series 03XX), Armor (MOS series 18XX), and Artillery (MOS series 08XX).

## Deployment period

MCOTEAs research assessment phase began in early March 2015 and ran through mid- to late-May depending on the unit. Some dates shifted as a result of data collection efforts. Table 8 displays the deployment schedules for GCE ITF units.

Table 8. GCE ITF research assessment phase timeline, by unit

Unit	Twentynine Palms		Bridgeport/Camp Pendleton	
	Start date	End date	Start date	End date
Infantry/Engineers	7-Mar-15	26-Apr-15	5-May-15 (B)	18-May-15 (B)
Artillery	8-Mar-15	11-Apr-15	N/A	N/A
Tanks	10-Mar-15	16-Apr-15	N/A	N/A
LARs	9-Mar-15	16-Apr-15	N/A	N/A
AAVs	9-Mar-15	28-Apr-15	5-May-15 (CP)	18-May-15 (CP)

Source: MCOTEAs research synchronization matrix.

## Locations used

Upon graduation from MOS school, volunteers received PCS orders to Camp Lejeune, North Carolina, where GCE ITF training occurred. All volunteers participated in the assessment conducted at the Marine Corps Air Ground Combat Center (MCAGCC) located in Twentynine Palms, California. Infantry and Provisional Infantry (Mechanized) also were assessed at the Marine Corps Mountain Warfare Training Center in Bridgeport, California. Camp Pendleton, California, served as the assessment site for amphibious operations (see Table 8).

## Battle rhythm

Collective GCE-specific tasks were repetitively performed by Marines in quasi-realistic conditions over a 3- to 4-month period between the three locations. Although the original intent of the assessment was to participate in 6 runs per day based on the hours of daylight within a day, the number of runs decreased to approximately 2 runs per day as the DORs increased for each unit.

### *0311/Provisional Infantry (PI)*

The 0311/PI assessment consisted of 21 two-day test cycles that corresponded to offensive and defensive tasking days. The PMOS-0311 Marine volunteers began each cycle with Day 1/Offensive tasks, while the PI Marine volunteers started each cycle

with Day 2/Defensive tasks. The assessment took 55 days. Offensive days consisted of five subtasks based on a squad live-fire attack: 1-km movement, negotiating an obstacle, fire and movement, counterattack, and CASEVAC. Defensive days consisted of two subtasks: 7-km forced march and constructing a fighting position. Marines rotated through every billet within the rifle squad. The mountaineering phase consisted of a single-day trial executed every other day and included the following tasks: 4.6- and 5-km movement, cliff ascent, and gorge crossing.

### *Artillery (08XX)*

The artillery assessment took place at Training Area Quackenbush, MCAGCC, Twentynine Palms. Trials were recorded over the course of one day during which a randomly selected team of 6 Marines, with 0, 1, or 2 female Marines, completed the entire maneuver scheme. These daily schemes were based on the Marine artillery mission and its tactical environment function. Trials consisted of the repetition of tasks that a battery would be expected to conduct during field training in an operational environment. Key tasks included loading, emplacing and displacing a howitzer, battery defense, ammunition handling and movement, and conducting indirect fire missions.

### *Armor (18XX)*

Both Tank and AAV evolutions took place at MCAGCC, Twentynine Palms. The Tank (PMOS-1812) evolution consisted of a three-day cycle, including maintenance, non-live-fire days and live-fire days. Tasks assessed included crew evacuation, CASEVAC, and disabled vehicle recovery. Live fire occurred in two phases, the first of which included uploading and transferring ammunition. The second phase included a series of four progressive live-fire engagements.

The AAV evolution consisted of a three-day trial cycle featuring live-fire and non-live-fire days at Twentynine Palms and a one-day trial cycle for amphibious CASEVACs at Camp Pendleton. AAV platoon executed 16 test cycles and 2 pilot test cycles at MCAGCC, followed by 1 test cycle and 10 record test cycles at Camp Pendleton.

## Appendix B: Survey Delivery Method

This appendix documents the survey administration method used to field the GCE ITF climate surveys to Marine volunteers at Camp Lejeune in November 2014 (baseline), February 2015 (posttraining), and May/June 2015 (postassessment).

We developed a standardized method for delivering the survey to groups of GCE ITF volunteer Marines. The survey was encoded into software on 30 ASUS tablets (see Figure 14) running Windows 8.1. Tablets were positioned in 2 rows of tables (15 tablets per row) in a classroom space at the GCE ITF's command building.

Figure 14. Promotional picture of the ASUS laptop/tablets used to collect survey responses



### Introductory briefing

After confirming that all Marines in the room were GCE ITF volunteers (along with a single enlisted Marine from the MCOTEA Research Monitor program to serve as an ombudsman), a CNA study team member provided an introductory brief, outlined in Figure 15.

Figure 15. Text used to brief GCE ITF participants at the start of each survey session

**Outline of the Survey Brief:**

*Wait until the research monitor is in place and all officers and chain of command have left the room.*

*Ask to ensure that everyone in the room at a computer is a volunteer. Direct assignments should be asked to leave: they are not included in the protocol.*

1. Thank the volunteers for being here today.
2. Introduce yourself, CNA, and your colleagues: CNA is an independent, not-for-profit think-tank that conducts policy and operations analysis for the Marine Corps.
3. Explain the source and purpose of the survey: Commandant asked us to run a survey to assess unit cohesion and morale through this process.
4. Explain the timing of the survey: three sessions: now to get baseline data; in February next year as your training is wrapping up; and, finally, when you return from deployment. After the final survey, you can take part in a focus group to discuss your experiences, if you wish to do that.
5. Explain the tablet: This survey is being administered on a tablet. It is touch sensitive. It runs Windows8. You cannot keep it; it stays here.
6. How it will work: Survey monitors will come around to each person, open up your tablet and start up the survey. We will enter your GCEID number and turn the tablet over to you
7. It will welcome you, you click continue. It then will ask you to read the informed consent statement. I know you've had to read other informed consent statements; this one applies specifically to this survey. At the end of the informed consent, you will be asked to agree that you have read it, and then you will be asked if you wish to take the survey.
8. Two items to note:
  - 1) This survey is voluntary. You can decline to take the survey. After reading the informed consent if you do not wish to take the survey, you can select "decline". Don't select "decline" if you want to take the survey because that will kick you out of the system. *If you choose to decline, please let us know - we will note that you were here and keep you from being asked to come back to do the survey.*
  - 2) Your responses will be treated in confidence and your information is only available to CNA researchers. When we write reports on the survey, your name and information will not be associated with the information that you enter. The only situation for which we can't guarantee confidentiality is if you express an intent to break the law or UCMJ or if you report a crime.
9. If you have questions about the survey questions, please ask us. If you have questions or concerns about the research, you are welcome to ask us, or you can approach a member of the research monitoring team (research monitor raise your hand!).
10. When you have answered all the questions, there will be no more and the "continue" button won't work. At that point, you can enter "Submit." Fold the tablet to the closed position and you are free to return to your unit.

The brief explained the survey's purpose and encouraged participants to read the informed consent statement. It also makes clear that participation is voluntary, and responses will be held in confidence. In accordance with the Institutional Review Board (IRB) protocol, Marines taking the survey are assured that their responses will not be tied to them by name and that data will be reported to Marine Corps leadership only in aggregate form.

## Taking the survey

Following the introductory brief, each volunteer was logged in by a CNA survey administrator using the volunteer's assigned GCE ITF identification number (EID) number.

The first screen is a welcome page that reiterates much of the introductory brief. The Marines select "Continue" and are taken to the informed consent statement that must be read before continuing. When the Marine clicked that he or she had read the informed consent statement, the Marine then was asked to *Submit* to the survey or *Decline*.

If a Marine declined to take the baseline survey, there was no record of his or her participation on the tablet. Those who declined were asked to identify themselves to survey administrators to be checked off a participation list and were instructed to return to their scheduled daily activities. They were thanked for their participation and were informed that they still could participate in later surveys if they chose to do so. In the posttraining and postassessment surveys, if a Marine declined to take the survey, there was a record of his or her declination on the tablet.

Marines who consented to take the survey answered a series of questions using the tablet's touch screen or keyboard/mouse. During the response period, Marines were not discouraged from talking among themselves. They were encouraged to ask questions of the administrators if they needed clarifying information about the survey. When they finished the survey, they selected a "Submit" button to end the session; they were thanked for their participation and were instructed to return to their scheduled daily activities.

Survey proctors discouraged Marines from talking among themselves during the introduction brief but not during the survey process. If a Marine did not have a view on the subject matter, he or she was free to discuss with peers to arrive at an opinion. Based on administrator observations, this type of dialogue was relatively limited, though no data were collected. In general, we found that conversation died down as the volunteers progressed through the survey. Administrators responded to a variety of issues raised by participants, mostly clearing up confusion on the meaning of some questions.

# Appendix C: Principal Components Analysis

We used a statistical technique called principal components analysis (PCA) to analyze the myriad of responses to questions asking participants for their opinion about the potential outcomes associated with integrating combat units or combat PMOSs. PCA reduces large numbers of responses to a smaller set of component responses that best capture the variability of opinion in the surveyed group.

Using this higher order analysis, we identified patterns in intangible properties of the unit through the variety of responses. This allowed us to capture themes of the surveyed population’s attitudes, opinions, and perceptions that are not available through other means.

## PCA structure

PCA is applied to a dataset in which each person—one on each row—has responded to a number of questions or measures, which are listed in columns. The PCA transformation generates components of the data—a new (smaller) set of columns: each person has a “score” on each component. The components are numbered PC1, PC2, and so on. The output has three elements:

- Scores for each person on each principal component: These are displayed as new columns in the dataset.
- Loadings: The correlation between a component and the original data columns.
- Eigenvalues: The relative importance of each new component.

The meaning of a component requires interpretation to understand what it reveals about individuals in the sample and the dataset as a whole. An individual score on a component is generated using a vector of “loadings” or correlations to each response on the columns for that individual. This vector of loadings allows the analyst to interpret the meaning of the principal component; usually, several related questions or data types on a particular topic will load heavily onto a component.

The first component (PC1) of a principal components analysis is mathematically a measure of “size.” In the case of an opinion survey, this is associated with overall strength of support or opposition to the topic at hand. In this study, that topic is the level of each Marine volunteer’s support or opposition to women in combat roles. Further components are mathematically measurements of “shape.” In opinion survey data, these are associated with perceived trade-offs and preferences.

One advantage of PCA is that each component is independent of other components. That means that Marines’ preferences or perceived trade-offs as measured by later PCs are independent of their overall support or opposition, measured by PC1.

## PCA of GCE ITF opinions

All three surveys included two questions about potential outcomes of gender integration—one looking at assignment of female Marines to non-ground-combat PMOSs in GCE units, the other asking about assignment of female Marines to ground combat PMOSs. Each of the two questions had 24 subparts and between 185 and 353 respondents for the three surveys, providing 43,456 responses.

### Method

Rather than analyze response patterns by gender for each outcome, we applied PCA to determine composite factors that together capture the differences in the opinions expressed.

We centered and scaled the entire dataset to ensure comparability between survey sessions and applied PCA to the centered/scaled baseline survey data to build the components (see the `PRCOMP` function in R 2.12.0 [39]). The data from subsequent surveys was transformed using the loadings derived from the baseline data.

When possible, we compared PC scores from the same individuals who had taken repeated surveys. This allowed us to block an individual in the statistical analysis to limit the variation in the datasets. We also correlated DOR records with PC scores to determine how attrition of GCE ITF volunteers was associated with the decision to drop on request.

### Results

From each respondent’s 48 data entries on the baseline survey, PCA identified 5 components that explained the majority of the variation in the data. We used a cut-off value of 1.5 for the eigenvalue associated with each component.

*PC1: Overall support for gender integration*

The first component divides responses regarding the potential outcomes of women in ground combat PMOSs or units into positives and negatives (see Table 9). Essentially, if a Marine thinks assignment of women will have positive effects, they will score highly on this component; volunteers with concerns regarding assignment of women to ground combat units will have negative scores.

Table 9. PC1 results

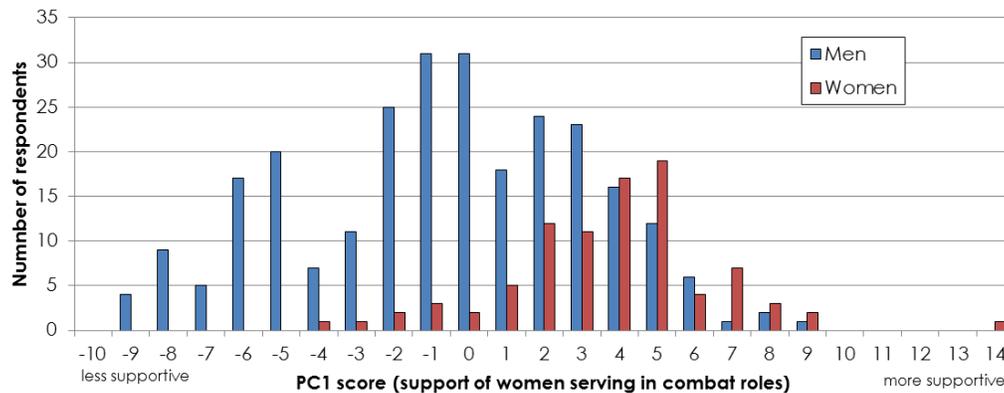
<b>Response outcome on Principal Component 1</b>	<b>Loading</b>	
An increase in unit cohesion	0.1577	Positively associated outcomes
Female Marines being treated equally by their peers/fellow Marines	0.1527	
An increase in unit combat effectiveness	0.1483	
Female Marines having the physical capabilities required for their jobs	0.1455	
Increased professional behavior	0.1452	
Female Marines being treated equally by leadership	0.1377	
Female Marines getting direct combat experience	0.1019	
Increased female Marines lateral move opportunities	0.0197	Unassociated outcomes
An increase in female duty assignment opportunities	-0.0371	
An increase in female Marine promotion opportunities	-0.0710	
A decrease in male Marine promotion opportunities	-0.1212	Negatively associated outcomes
An increase in non-deployable Marines	-0.1272	
Enemies targeting women as POWs	-0.1371	
A double standard in expectations based on gender	-0.1566	
Male Marines feeling obligated to protect female Marines	-0.1630	
A unit being vulnerable to combat casualties	-0.1698	
Intimate relationships [...] causing problems	-0.1713	
Some Marines getting preferential treatment	-0.1770	
Male Marines being distracted from their jobs	-0.1770	
Female Marines being at risk of sexual harassment or assault	-0.1787	
A decrease in unit cohesion	-0.1816	
A decrease in unit combat effectiveness	-0.1819	
An increase in sexual harassment allegations	-0.1888	
An increase in sexual assault allegations	-0.1909	

Source: PCA analysis of CNA GCE ITF climate survey data.

Outcomes associated with female Marine opportunities—to increase assignments and lateral moves, or to be promoted—do not weigh heavily on PC1 (see Table 9). This suggests that female opportunity is not a consideration when Marines in the GCE ITF weigh gender integration as positive or negative.

We found a statistically significant difference between scores of women and men on PC1, support of women in combat roles, largely driven by the distribution of women on the positive end and by the men being relatively evenly divided between positive and negative responses (see Figure 16).

Figure 16. Distribution of PC1 (support of women in combat roles) scores of male and female Marines in the GCE ITF



Source: CNA analysis of GCE ITF climate survey data.

### PC2: Combat effectiveness

PC2 is a balance of unit effectiveness and female Marine opportunity. Marines who score highly on PC2 will generally feel that women will succeed in integrated units and that those units will be more combat effective. Marines with low scores (high negative scores) have responses indicating an opinion that integrated units will be less combat effective, more prone to casualties and lacking in cohesion.

There was a statistically significant difference in the responses of male and female Marines to PC2 initially, but this disappeared after accounting for attrition (see Table 10). The steady and statistically significant trend during the GCE ITF was for PC2 to decrease: over time Marines felt that integrated units would be less combat effective, associated with the perception that generally women would not succeed in them.

Table 10. PC2 results

<b>Response outcome on Principal Component 2</b>	<b>Loading</b>	
Female Marines getting direct combat experience	0.2113	Positively associated outcomes
An increase in female duty assignment opportunities	0.2031	
An increase in unit combat effectiveness	0.1924	
Increased professional behavior	0.1901	
Female Marines being treated equally by leadership	0.1789	
An increase in female Marine promotion opportunities	0.1784	
Female Marines being treated equally by their peers/fellow Marines	0.1782	
An increase in unit cohesion	0.1749	
Increased female Marines lateral move opportunities	0.1719	
Female Marines having the physical capabilities required for their jobs	0.1640	
Female Marines being at risk of sexual harassment or assault	0.1068	
An increase in sexual harassment allegations	0.1034	Unassociated outcomes
An increase in sexual assault allegations	0.0979	
A double standard in expectations based on gender	0.0713	
Male Marines feeling obligated to protect female Marines	0.0660	
Enemies targeting women as POWs	0.0522	
A decrease in male Marine promotion opportunities	0.0519	
Some Marines getting preferential treatment	0.0500	
Intimate relationships among a unit's Marines (or Sailors) causing problems	0.0352	
An increase in non-deployable Marines	0.0312	
Male Marines being distracted from their jobs	0.0123	
A unit being vulnerable to combat casualties	-0.0113	
A decrease in unit combat effectiveness	-0.0385	
A decrease in unit cohesion	-0.0797	

Source: PCA analysis of CNA GCE ITF climate survey data.

### PC3: Female security

PC3 indicates a perceived trade-off between female opportunity and risk to female safety—from both sexual assault and being targeted as prisoners for war (POWs).

In the baseline survey, there was a statistically significant difference between male and female responses on PC3, with women perceiving more opportunity than risk for themselves and male responses spread across the spectrum. During the GCE ITF, the male Marines decreased their perception of risk to women, and the averages of male and female volunteers were statistically indistinguishable (see Table 11).

Table 11. PC3 results

Response outcome on Principal Component 3	Loading	
Female Marines being at risk of sexual harassment or assault	0.2174	Positively associated outcomes
Enemies targeting women as POWs	0.2091	
An increase in unit cohesion	0.1947	
An increase in sexual harassment allegations	0.1897	
An increase in sexual assault allegations	0.1760	
Intimate relationships among a unit's Marines (or Sailors) causing problems	0.1436	
An increase in unit combat effectiveness	0.1023	
Male Marines feeling obligated to protect female Marines	0.0776	Unassociated outcomes
Male Marines being distracted from their jobs	0.0675	
Some Marines getting preferential treatment	0.0458	
Increased professional behavior	0.0443	
Female Marines being treated equally by their peers/fellow Marines	0.0433	
Female Marines being treated equally by leadership	0.0360	
A unit being vulnerable to combat casualties	0.0350	
Female Marines having the physical capabilities required for their jobs	0.0275	
A double standard in expectations based on gender	-0.0134	
An increase in non-deployable Marines	-0.0806	
A decrease in unit combat effectiveness	-0.1172	Negatively associated outcomes
A decrease in male Marine promotion opportunities	-0.1388	
Female Marines getting direct combat experience	-0.1728	
A decrease in unit cohesion	-0.1848	
An increase in female Marine promotion opportunities	-0.2229	
Increased female Marines lateral move opportunities	-0.2643	
An increase in female duty assignment opportunities	-0.2971	

Source: PCA analysis of CNA GCE ITF climate survey data.

*PC4: Male opportunity*

PC4 is a trade-off between female opportunity and male opportunity: To what extent will greater female opportunity and possibility of promotion lead to decreased promotion rates for men? This also can be seen as a systematic bias for or against male promotions relative to female promotions (see Table 12).

Table 12. PC4 results

<b>Response outcome on Principal Component 4</b>	<b>Loading</b>	
<b>A decrease in male Marine promotion opportunities</b>	0.2838	Positively associated outcomes
<b>An increase in female Marine promotion opportunities</b>	0.2518	
<b>Female Marines being treated equally by leadership</b>	0.2460	
<b>Female Marines being treated equally by their peers/fellow Marines</b>	0.2369	
<b>An increase in non-deployable Marines</b>	0.2291	
<b>Increased professional behavior</b>	0.1215	
<b>A decrease in unit cohesion</b>	0.1138	
<b>A unit being vulnerable to combat casualties</b>	0.1113	
<b>A decrease in unit combat effectiveness</b>	0.1077	
<b>Some Marines getting preferential treatment</b>	0.0678	Unassociated outcomes
<b>Male Marines being distracted from their jobs</b>	0.0493	
<b>Male Marines feeling obligated to protect female Marines</b>	0.0220	
<b>An increase in unit cohesion</b>	0.0169	
<b>Female Marines having the physical capabilities required for their jobs</b>	-0.0098	
<b>An increase in unit combat effectiveness</b>	-0.0271	
<b>Enemies targeting women as POWs</b>	-0.0712	
<b>Intimate relationships among a unit's Marines (or Sailors) causing problems</b>	-0.0719	
<b>Female Marines being at risk of sexual harassment or assault</b>	-0.0734	
<b>A double standard in expectations based on gender</b>	-0.0800	Negatively associated outcomes
<b>An increase in sexual assault allegations</b>	-0.0986	
<b>An increase in sexual harassment allegations</b>	-0.1054	
<b>An increase in female duty assignment opportunities</b>	-0.1360	
<b>Increased female Marines lateral move opportunities</b>	-0.1517	
<b>Female Marines getting direct combat experience</b>	-0.2492	

Source: PCA analysis of CNA GCE ITF climate survey data.

All Marines are clustered around the middle of the distribution, and there were no statistical differences between male and female volunteer perceptions over time. We did see an increase in this metric following the training phase; volunteers of both genders perceived that an increase in female integration would lead to a decrease in opportunities for male Marines.

## Appendix D: GCE ITF Volunteers

In this section, we concentrate on other important demographic, ability, and experience characteristics of the GCE ITF survey participants and how these characteristics differ by gender. Where possible, we also compare the characteristics of the survey participants to the GCE population in the Marine Corps to gain a better understanding of how these populations are overrepresented or underrepresented among the survey respondents. We cannot compare female Marine volunteers with their counterparts in the operating forces because currently there are no women in GCE units.

### Volunteer demographic profile

#### Military rank and age

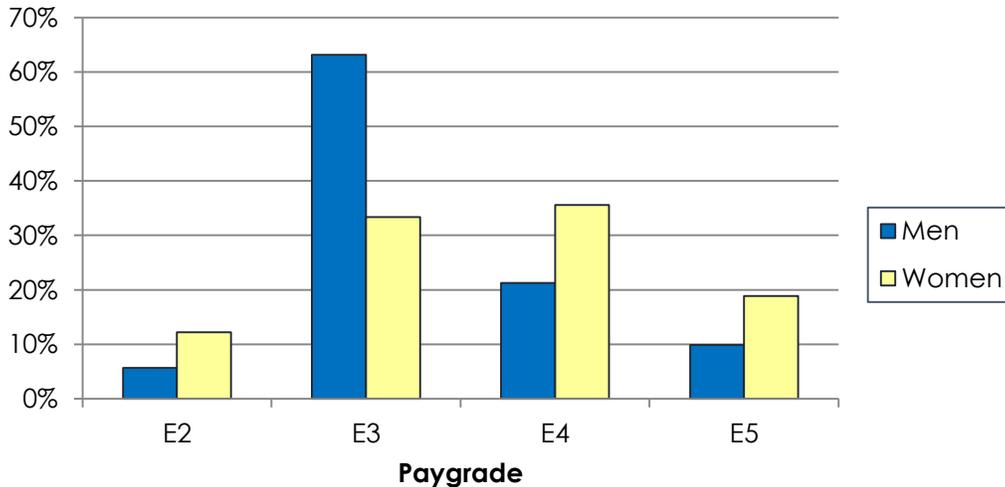
To be eligible to volunteer for the GCE ITF, Marines had to be in paygrades E5 and below. Overall, 7 percent of the initial participants were in paygrade E2, 56 percent were in E3, 25 percent were in E4, and 12 percent were in E5. As Figure 17 shows, the paygrade distribution differs by gender. Female Marine volunteers were skewed to the higher GCE ITF eligible paygrades compared with the male volunteers. Because of the difference in the paygrade distribution by gender, female GCE ITF participants were slightly older on average than male participants; the average ages of participants were 22.8 for women and 22.5 for men. However, this age difference between the male and female volunteers is not statistically significant.

The paygrade distribution of men in the GCE ITF differed significantly from that of male GCE Marines in the E2-E5 ranks, with a much larger percentage of men in the E4 and E5 paygrades in the GCE (33 and 13 percent, respectively) than in the GCE ITF (21 and 10 percent, respectively). Given that a larger percentage of men in the operating force have more experience in the Marine Corps, the responses to the GCE ITF survey might more closely reflect the opinions of more junior male Marines than their more senior counterparts. However, the average ages of men in GCE units (22.7 years) and in the GCE ITF (22.5 years) are not statistically different.

Although the female Marines in the GCE ITF did not have female GCE counterparts in the operating forces, we compared female volunteers with all female Marines in

paygrades E2 through E5. The distribution of female volunteer NCOs was more similar to the total female NCO distribution, with 55 percent of the GCE ITF female volunteers in paygrades E4 and E5 compared with 50 percent of female E2-E5s being NCOs in the operating forces.

Figure 17. GCE ITF respondents' paygrade distribution, by gender



Source: CNA analysis of GCE ITF baseline survey respondents matched to demographic information in the MCOTEA GCE ITF volunteer database.

## Physical fitness and marksmanship skills

Differences in physical quality and ability also could exist between men and women in the ITF, between men in the ITF and men in GCE units overall, and between ITF female volunteers and all women in the Marine Corps. One way to compare different the physical ability of groups is to compare their Physical Fitness Test (PFT) and their Combat Fitness Test (CFT) scores to see if average scores differ between the groups.

Unfortunately, it is difficult to compare male and female PFTs because the scores follow different standards for each group. For example, men are required to perform pull-ups for their PFTs while women are required to perform a flexed arm hang. For men and women in the GCE ITF, the average PFT score for men was 252 compared with an average of 276 for women, but these scores are not comparable when trying to ascertain which group is more physically fit.

Another physical fitness measure is the number of pull-ups that Marines were able to perform on their PFTs. To meet the volunteer eligibility requirements for ground

combat PMOSs, GCE ITF participants were supposed to obtain, at the least, a class 3 male PFT score. However, the women in the provisional infantry PMOSs were not required to meet the class 3 male PFT score benchmark. Roughly 6 percent of the female volunteers did not meet the 3-pull-up requirement, whereas all men participating in the GCE ITF met the requirement. The women not meeting the 3-pull-up requirement were those in provisional infantry PMOSs.

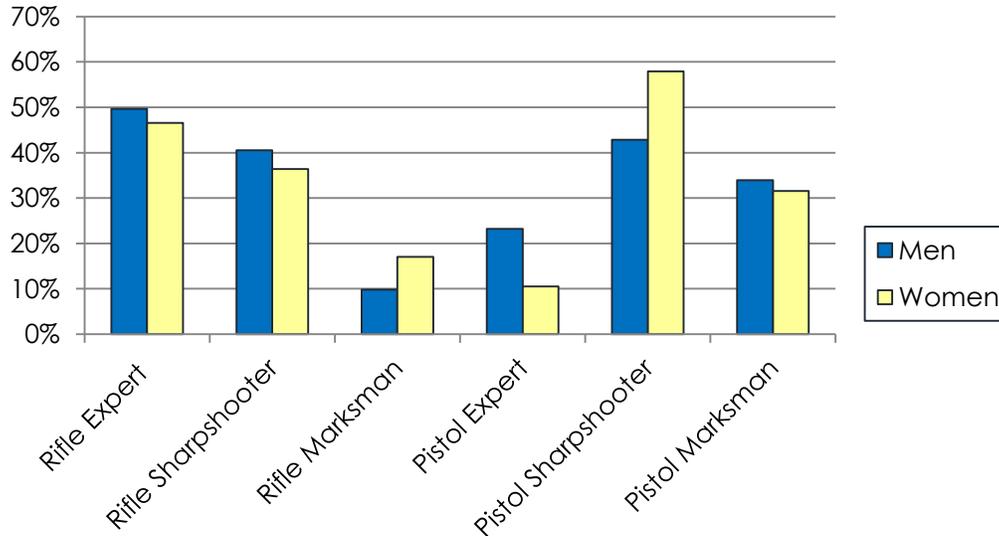
Similar to the PFT, the Marine Corps scales the CFT differently for men and women. The average male Marine volunteer's CFT score was 287 versus an average score of 293 for female Marine volunteers. We find no evidence of major differences in physical fitness levels based on PFT and CFT scores between male volunteers and those who are in GCE units. The scores for men in the ITF compared with their counterparts in the operating force are similar, with average PFT and CFT scores for GCE men in the operating force being 255 and 290, respectively. However, the PFT and CFT scores for women in the ITF were significantly higher than for women in the Marine Corps overall; the average PFT and CFT scores for women in the Marine Corps are 243 and 281, respectively, compared with the average scores of 276 and 293 for women in the GCE ITF. This difference is most likely due to the fact that the women in the GCE ITF were required to have a third-class male PFT score. Therefore, the women in the GCE ITF are more physically fit, on average, than all women in the E2-E5 paygrades.

Ninety-eight percent of GCE ITF participants met the Marine Corps' gender-specific height and weight standards. Although not statistically significant, men met the standards at slightly higher rates than women: 98 and 97 percent, respectively. Similarly, 98 percent of E2-E5 men in other GCE units and 98 percent of E2-E5 women in the Marine Corps met height/weight standards.

We also examine both rifle and pistol marksmanship scores for GCE ITF survey participants. Figure 18 displays the percentage of men and women receiving both rifle and pistol scores in the expert, sharpshooter, and marksman categories, respectively. (Figure 18's footnote gives the rifle and pistol scores required for each category.)

The difference between the percentage of men and women scoring as pistol and rifle experts is not statistically significant. There is, however, a difference in the rifle score distributions of men in the ITF compared with men in other GCE units. On average, men in the fleet are more likely to be rifle experts (59 percent) compared with men in the ITF (50 percent). There are no statistically significant differences in the pistol score distributions of men in the ITF versus those in the fleet. There is not a statistically significant difference of female rifle and pistol experts in the GCE ITF compared with the women in the Marine Corps overall.

Figure 18. Rifle and pistol marksmanship categories, by gender<sup>a</sup>



Source: CNA analysis of GCE ITF baseline survey data.

<sup>a</sup> To be considered an expert in rifle marksmanship, a Marine must score between 305 and 350, while the pistol expert score is between 345 and 400. To be considered a sharpshooter in rifle marksmanship, a Marine must score between 280 and 304, while the pistol sharpshooter score is between 305 and 344. To receive the score of marksman, the rifle score must be between 250 and 279, while the pistol marksman score is between 245 and 304.

## Cognitive abilities

The Armed Forces Qualification Test (AFQT) score is an important cognitive ability measure for the Marine Corps. A comparison of average AFQT scores by gender found no statistically significant difference. The average AFQT score for GCE ITF participants was 60.4; the average female score, at 62.4, is slightly higher than the average male score of 59.7. The average AFQT score for men in the operating force was 60.4.

The average General Technical (GT) scores also differed slightly by gender but were not statistically significant: men performed better on average than women with scores of 106.4 and 104.6, respectively. Therefore, we find no evidence of cognitive ability differences in the men and women participating in the GCE ITF.

The average GT score for men in the operating force was slightly higher than men in the ITF at 107.6 and slightly lower for the women in the operating forces at 102.7 compared with women in the GCE ITF. Although there is a statistical difference in

male and female GT scores in the ITF and in the operating force, the magnitude of this difference is not large, providing little evidence that the cognitive abilities of men and women in the ITF differ in any meaningful way from their counterparts in the rest of the Marine Corps.

## Volunteer attrition

GCE ITF volunteers were allowed to DOR at any time and for any reason throughout the course of the ITF.<sup>18</sup> Out of 353 volunteers who initially took the survey, 129 (37 percent) were recorded as DORs by the end of the assessment. This phenomenon introduced sample attrition into our analysis.

If DORs did not occur randomly throughout the survey population, this attrition could introduce biases into any changes we see occurring over the different phases of the survey. Therefore, we must explore any trends in the DOR population's demographic characteristics and in their baseline survey responses to better understand the direction of the bias introduced in our estimated changes over time. In addition, by exploring the characteristics of the DORs, we can gain a better understanding of why Marines chose to DOR and what challenges might have led to their choices to leave the unit.

Male and female Marine volunteers chose to DOR at similar rates (37 percent of men and 36 percent of women); however, there was a difference in the point at which the majority of men versus women chose to DOR. Approximately 53 percent of the female DORs occurred between the baseline survey and the posttraining survey, whereas 66 percent of the male DORs occurred over this period.

The difference in the modal point in time at which men and women dropped from the unit could be related to their reasons for DORing. In Table 13, we display the general reasons volunteers provided to explain their DOR from the GCE ITF, stratified by gender. A higher percentage of men claimed to have attrited because of misconduct, disinterest, and personal and financial reasons. Women tended to provide reasons for DOR associated with health or poor physical performance.

There were also significant differences in the DOR rates by paygrade. E2s and E5s dropped from the ITF at higher rates than did E3s and E4s (77 percent of E2s, 38 percent of E3s, 27 percent of E4s, and 42 percent of E5s chose to DOR). In addition, the more junior Marines dropped earlier in the process compared with the more senior Marines. Seventy percent of E2s and 74 percent of E3s that dropped did so

---

<sup>18</sup> While volunteers could DOR for any reason, they did not have to provide one.

between the baseline and the posttraining survey compared with 51 percent of E4s and 54 percent of E5s.

In addition, there were statistically significant cognitive quality differences between the DORs and non-DORs, with the non-DORs typically outperforming the DORs on observable cognitive measures. Marines who maintained their volunteer status scored significantly higher than those who DORed on both the AFQT and the GT cognitive ability tests. The average AFQT and GT scores for the non-DORs were 63 and 107, respectively, compared with an average of 57 and 104 for the DORs.

Table 13. Percentages of male and female Marine volunteers in each DOR reason category<sup>a</sup>

DOR reason category	Marine volunteers		
	Male	Female	Total
Medical	22%	47%	28%
Disinterested	11%	0%	9%
Misconduct	5%	3%	5%
Moved to direct assignment	3%	3%	3%
Wanted to pursue other opportunities	24%	3%	19%
Poor physical performance	0%	16%	4%
Personal or financial reasons	30%	9%	25%
No reason	5%	19%	8%

Source: CNA analysis of MCOTEA GCE ITF volunteer data.

<sup>a</sup>. We report percentages vice the number of DORs per reason category because the cell sizes for some expressed reasons are very small.

Differences in physical ability between Marines who DORed and those who did not were not as evident, with non-DORs having a higher average CFT score than DORs (286 versus 284), but the DORs having higher average PFT scores compared with the non-DORs (256 versus 254). None of the differences between the two groups in these tests were statistically significant.

The differences in seniority and cognitive ability between the DORs and non-DORs are important to keep in mind as we examine changes in survey responses throughout the course of the ITF. Throughout the rest of this report, we will highlight instances where the baseline survey responses for the DORs differed significantly from the baseline responses of their non-DOR counterparts. This allows us to assess differences in experiences, opinions, and motivations between the two

groups that could potentially drive any of the changes we see over time in the survey responses.<sup>19</sup>

## Marine Corps experiences

Because GCE ITF participants were required to be in the more junior paygrades, around 4 percent of volunteers in the baseline survey had just completed training and had not yet reported to their first units. This statistic was consistent for both men and women. Marines who have not yet reported to their first duty stations will have limited experience working with other Marines and will not have deployed. In this subsection, we explore differences in Marines' experiences for those who had previously worked at other Marine Corps duty stations.

### Experience in most recent unit

The male and female volunteers that participated in the GCE ITF were drawn from different types of previous units. Men in combat MOSs mostly arrived from previous assignments to combat units and did not have to be retrained beforehand. Men in provisional infantry came from a mix of units. Female volunteers came from noncombat units and those filling combat MOS positions had to attend schoolhouse training for those MOSs that they would hold as volunteers for the GCE ITF.<sup>20</sup> Any male and female response differences when asked about their previous units could potentially be explained by the differences in previous unit types between men and women.

#### *Unit characteristics*

One survey question asked how volunteers would rate the following characteristics of their previous units: discipline, teamwork, morale, performance, and trust. There were no notable differences in the perceived quality of unit discipline observed between male and female Marine survey respondents. However, there were slight differences in male and female responses for the other perceived unit characteristics explored in the survey (see Figure 19 and Figure 20).

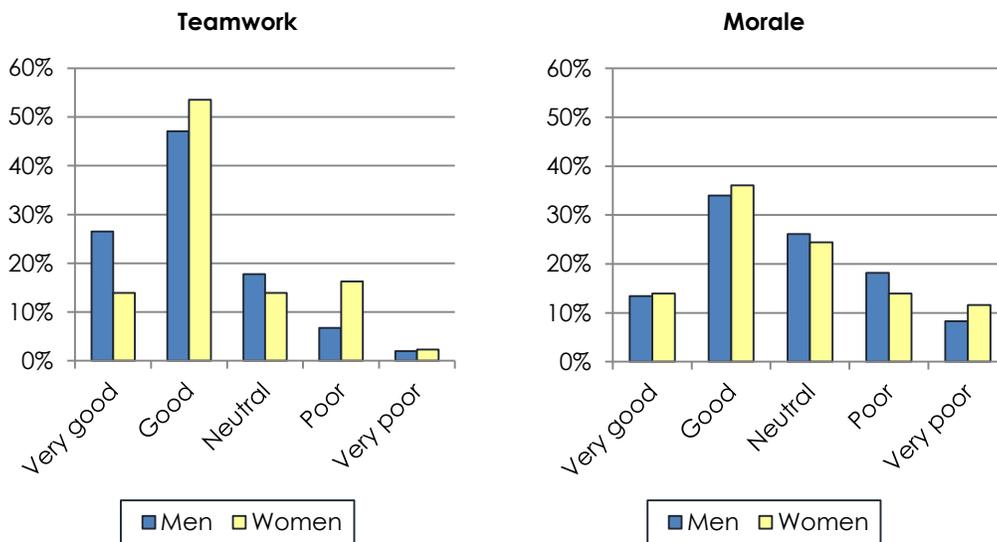
---

<sup>19</sup> If we do not mention differences in the baseline responses between the two groups, assume that significant differences do not exist in those particular survey themes.

<sup>20</sup> One exception to this was the women in the Engineering Company. Female engineers did not have to be retrained because that MOS already was integrated. However, the female engineers had never served in a combat unit below the regimental level before the GCE ITF.

Male and female differences in reported perceived unit teamwork and morale were not statistically significant. In general, male Marines reported better perceived teamwork in their previous units than did female respondents: 74 percent of men reported their previous units' teamwork was either "good" or "very good," while 67 percent of women reported the same. In addition, women were slightly more optimistic than men about their previous unit's morale: 50 percent of women reported either "good" or "very good" morale, and 47 percent of men reported the same.

Figure 19. Perceived teamwork and morale at previous units, by gender

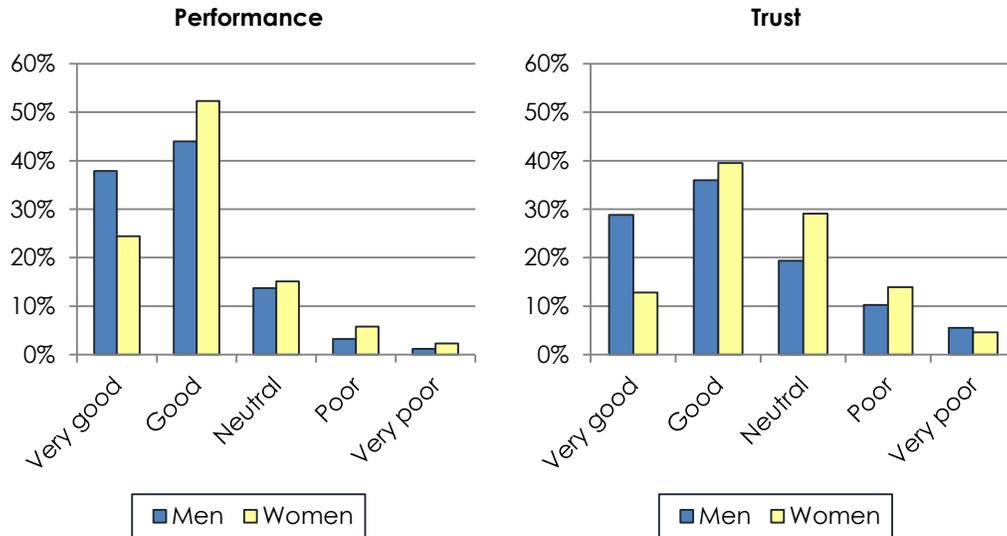


Source: CNA analysis of GCE ITF baseline survey data.

Furthermore, we find no statistically significant gender difference in reported perceptions regarding previous units' performance: 82 percent of men indicated "good" or "very good" previous-unit performance, while 77 percent of women indicated "good" or "very good" performance. Men, however, did report a significantly higher level of trust in their previous units than did women, with 65 percent of men reporting "good" or "very good" trust levels and 52 percent of women reporting "good" or "very good" unit trust levels.

The values of these different measures are used in later analysis to compare experiences in the GCE ITF with Marines' experiences in their prior unit.

Figure 20. Perceived performance and trust at previous units, by gender



Source: CNA analysis of GCE ITF baseline survey data.

### *Top factors related to fulfilling a unit's mission*

Volunteers who were assigned to other units before reporting to the GCE ITF were asked about the top three factors that enabled them to fulfill their previous units' missions. Two of the top factors were the same for both men and women. They indicated that "having SNCOs/NCOs who led by example" and "having unit members who work together as a team" were important for fulfilling the unit's mission. Men, however, indicated that "unit morale" was the third most important factor in fulfilling a unit's mission, whereas this factor was not among the top three for female Marine respondents. On average, women believed that "unit training/individual training" mattered more than "unit morale."

### *Previous integration experiences*

Less than half (44 percent) of survey respondents indicated that they had recently worked in a unit where they interacted regularly with both male and female Marines. This was driven by low numbers among male Marines (22 percent); 91 percent of female participants in the GCE ITF had worked regularly with both male and female Marines.

Respondents with recent experience in an integrated unit were asked for their perspectives on the influence of women in that unit on the following intangible factors: teamwork, morale, discipline, performance, and trust.

The general perspective was that women made no difference in these factors (greater than 60 percent of all respondents to each factor said that the presence of female Marines had no effect); but, there was a trend in responses by gender. Among male Marines, a greater number reported that women degraded these factors than reported that women improved them; exceptions were an improvement to morale, and no difference in teamwork. Among female Marines, a greater number indicated that having women in their previous unit improved these factors, and a smaller number indicated that women degraded these factors.

DORs who had previously worked with women in other units were more likely to say that having women in previous units improved discipline (31 percent of DORs versus 18 percent of non-DORs) and performance (33 percent of DORs versus 21 percent of non-DORs). This could indicate that DORs, compared with non-DORs, had slightly more positive previous experiences with their female colleagues.

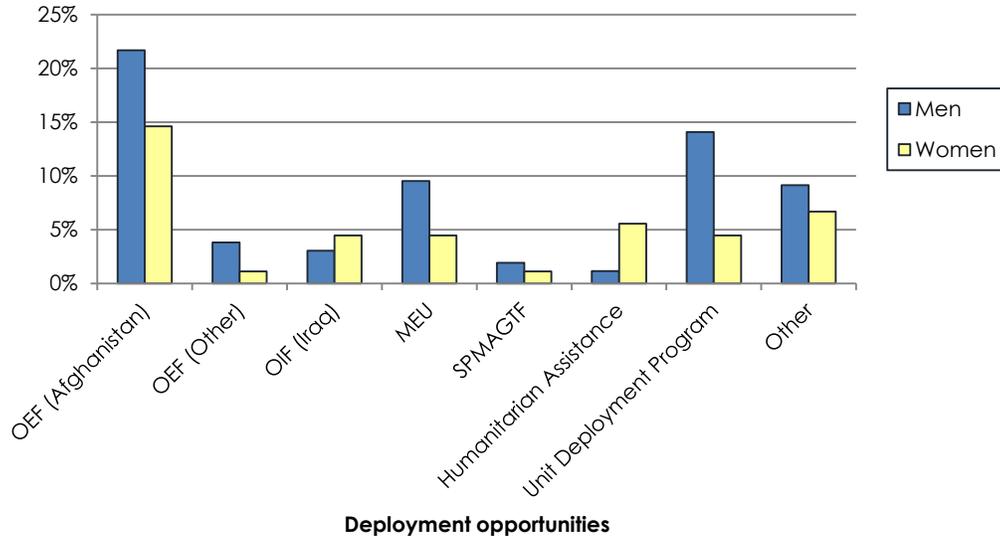
## Deployments

Another important Marine experience is deployment. About 40 percent of GCE ITF survey participants had deployed. This deployment experience differed significantly for men and women. Approximately 44 percent of men had deployed, compared with 31 percent of women. Figure 21 reports the different Marine deployment opportunities since 2005 and how GCE ITF survey respondents' experiences differ by gender. As indicated in the figure, a higher proportion of male Marines had deployed across most deployment opportunities except for Operation Iraqi Freedom (OIF) deployments, where 4 percent of women had deployed versus 3 percent of men,<sup>21</sup> and humanitarian assistance deployments, where 6 percent of women had deployed versus 1 percent of men. When examining the difference in deployments for DORs versus non-DORs, a higher percentage of the non-DORs had not deployed compared with the DORs (63 percent versus 53 percent). Therefore, a higher percentage of the volunteers who dropped out of the ITF had a sense of what conditions were actually like during deployment compared with those who remained in the ITF.

---

<sup>21</sup> OIF deployments ended in 2011. More women have had an opportunity for an OIF deployment because they are slightly older and in more senior paygrades than the men.

Figure 21. Deployments, by deployment opportunity and gender



Source: CNA analysis of GCE ITF baseline survey data.

## Appendix E: Volunteers' Motivations

In this appendix, we examine GCE ITF Marine volunteers' responses to questions asking why they decided to volunteer for the GCE ITF and their motivations for joining and remaining in the Marine Corps. A distinction we use in this part of our analysis is identifying “push” and “pull” factors. Push factors are motivations to get away from a current or previous situation; pull factors draw the Marine into a new situation. Push factors for Marines volunteering for the GCE ITF included getting out of a unit with a poor command climate and avoiding a deployment; for example, “avoiding college” is a push factor for a Marine to join the Marine Corps. Pull factors are associated with incentives of a new situation, and those incentives include both *benefits*—defined incentives, such as retirement or a bonus—and *opportunities*—including advanced training, possibility of travel, and choice in future assignments.

### GCE ITF participation

Two survey questions specifically asked respondents why they volunteered for the GCE ITF and what they personally hoped or expected from the experience. In each case, respondents picked three reasons (unranked) from a list, or wrote in their own reasons.

#### GCE ITF volunteers' hopes and expectations

The most commonly selected personal *hopes or expectations* from the GCE ITF were associated with participants' increasing their personal physical fitness (59 percent) and being more competitive for promotion (55 percent).<sup>22</sup> A large proportion of participants hoped to use the GCE ITF to get a better future billet assignment (48 percent of men) or to laterally move to a different MOS (34 percent of women).

A majority of female Marines (74 percent) expressed hope that the GCE ITF would show that women *can* serve successfully in ground combat units; about 5 percent of

---

<sup>22</sup> Each Marine could choose three responses, so the totals for all responses add to more than 100 percent.

female participants hoped or expected that the GCE ITF would show that female Marines *cannot* serve successfully in ground combat units. Of male Marine volunteers, 19 percent hoped for the GCE ITF to show that women *can* serve successfully in a ground combat unit, and 16 percent hoped for or expected the opposite—to show that women *cannot* serve successfully in a ground combat unit.

Personal hopes and expectations for GCE ITF participation differed in two ways for DORs and non-DORs. More non-DORs hoped that they would be more competitive for promotion as a result of their GCE ITF participation (60 percent of non-DORs versus 47 percent DORs), which could potentially indicate more desire among non-DORs compared with DORs to be successful in the Marine Corps. In addition, more Marines who DORed hoped that, by participating in the GCE ITF, women would show that they cannot serve successfully in GCE units (21 percent of DORs versus 8 percent of non-DORs). Therefore, a higher percentage of the population that attrited from the unit wanted women to fail in the ITF’s assessment phase compared with those who remained through the end of the assessment.

On one hand, positive changes we observe in the views on women serving in combat roles between the baseline and posttraining survey or between the posttraining and postassessment survey might be a result of the population that DORed from the unit and not a true change in the participants’ views. On the other hand, any negative changes we observe along these lines might have been larger in magnitude had the DORs remained in the unit.

## Reasons for volunteering

Overall, the most commonly selected reason for *volunteering to join* the GCE ITF was “to contribute directly to an important time in Marine Corps history” (chosen by 60 percent of all respondents). This response was the most common for male Marines (60 percent). The most common response among female respondents was that they volunteered for the challenge (67 percent); 31 percent of men selected this response.

The motivations to demonstrate that female Marines *can* or *cannot* successfully serve in a ground combat unit were not in the top three most common responses for either gender: 44 percent of female Marines and 11 percent of male Marines were motivated by “help to show that women *can* serve successfully”; 11 percent of men and 7 percent of women selected “help to show that women *cannot* serve successfully”.

There were gender differences across response patterns in reasons for volunteering for the GCE ITF. Beyond their contribution to Marine Corps history, male volunteers tended to be motivated by push factors, such as wanting “to do something different” (54 percent) or avoiding an alternate assignment (40 percent); female volunteers were motivated by pull factors, particularly the opportunity to develop and validate gender-neutral standards (53 percent).

Curiosity played a role in both expectations and motivations to volunteer for the GCE ITF. Using the write-in option, about 10 percent of respondents stated that they want to understand how integration will work, or if leadership is conducting the ITF in a fair manner. Some expressed the following general notion: I'm an average Marine, and if I can work in an integrated unit so can any other Marine.

We looked to see if there were differences among male Marines who reported previous recent experience working with female Marines and their reported motivations for volunteering for the GCE ITF. Were those with positive experiences more motivated to prove that female Marines can serve successfully, and those with more negative experiences more likely to want to prove that female Marines cannot serve successfully?

Examining survey responses, we found no correlation between male Marines' previous integration experiences and being motivated to volunteer for the GCE ITF specifically to prove that women can or cannot serve successfully. Rather, we found that male Marines with a positive experience of working with female Marines were slightly less likely to be responding to push factors (that is, less likely to have joined GCE ITF because they were trying to get out of a previous assignment or because they wanted to do something different). They were slightly more motivated by the challenges associated with the GCE ITF than their counterparts who had negative experiences working with female Marines.

We observe similar patterns in the differences between the DORs' and non-DORs' motivations for joining the GCE ITF to those we observed in their hopes and expectations in joining the GCE ITF. A higher percentage of non-DORs joined the GCE ITF for the challenge (43 percent of non-DORs versus 33 percent of DORs). A higher percentage of DORs explicitly joined to show that female Marines cannot successfully serve in combat (6 percent of non-DORs versus 16 percent of DORs). Although 16 percent is not a high proportion of the DOR population, it could indicate that those who left the GCE ITF were less in favor of women serving in combat roles than those who remained through the end of the assessment.

## Joining the Marine Corps

In the baseline survey, we asked participating Marines to provide their reasons for joining the Marine Corps. Eleven options were provided (see baseline survey question 9 in Volume 2), and Marines could choose or write in up to three reasons.

Overall, the most frequent responses were "to serve the country/defend the nation" (67 percent), "for the challenge" (56 percent), and "to be part of something bigger than myself" (45 percent). These were the three most common responses for both

men and women. The order was different for female volunteers: first was “for the challenge” (69 percent), and “to defend the nation” was second (61 percent).

The general response patterns of male and female Marines to other reasons for joining the Marine Corps also were similar: education benefits (28 percent for both), seeing the world (22 percent for men, 31 percent for women), leadership training (18 percent for both), and family tradition (14 percent for men, 11 percent for women) accounted for most other responses.

For both genders, pull motivations (i.e., reasons drawing them into the Marine Corps) were more common than push motivations (e.g., wanting to avoid college or getting away from their hometown). If there was a gender-related pattern, it was that male Marines in the GCE ITF tended to cite *benefits* of joining the Marine Corps, such as pay (8 percent), health benefits (5 percent), and retirement (4 percent). No female Marines listed retirement benefits as a motivation. The largest write-in category for male Marines’ was interest in opportunities to experience combat (7 percent). No female volunteers cited this reason as a motivation to join the Marine Corps.

Instead, female GCE ITF volunteers appear to have joined the Marine Corps looking for *opportunity*. Along with seeing the world (31 percent), 11 percent of female volunteers wrote in a reason for joining the Marine Corps associated with the pride and respect of being in the Corps, or of such duty as taking part in humanitarian assistance missions.

## Summary

By and large, volunteers were motivated to join the GCE ITF because they wanted to be involved in an important time in Marine Corps history, to find out how the ITF was being conducted, and to be sure that the “right” decisions would be made. Furthermore, Marine volunteers, regardless of gender, were broadly motivated by other common goals, such as using the time to increase physical fitness or angling for a better or different kind of post-GCE ITF assignment—attributes that could be associated with career development.

GCE ITF volunteers joined the Marine Corps for a variety of reasons. Major motivations included serving their country or the opportunity to be part of something larger than themselves. These findings, bolstered by the free-text comments, suggest that the majority of Marine volunteers who responded to the baseline survey were motivated to ensure that ground combat units are composed of qualified Marines. We also saw some indication that those who were more motivated to join the ITF because they did not want women to succeed in combat roles were more likely to DOR throughout the course of the ITF.

## References

- [1] Dempsey, Martin E., General, United States Army, and Chairman of the Joint Chiefs of Staff, and Leon E. Panetta, Secretary of Defense,. Jan. 24, 2013. Memorandum for the Secretaries of the Military Departments, Acting Under Secretary of Defense for Personnel and Readiness, Chiefs of the Military Services. Subject: Elimination of the 1994 Ground Combat Definition and Assignment Rule.
- [2] Dempsey, Martin E., General, United States Army, and Chairman of the Joint Chiefs of Staff,. Jan. 9, 2013. Memorandum for the Secretary of Defense. Subject: Women in the Service Implementation Plan. CM-0017-13.
- [3] Amos, James F., Commandant of the Marine Corps,. CMC 12 Mar 14. White Letter No. 1-14. Subject: Integrating Female Marines within the Ground Combat Element.
- [4] Amos, James F., General, Commandant of the Marine Corps,. June 2014. Marine Corps Force Inegration Campaign Plan. Subject: Basic Plan.
- [5] *National Defense Authorization Act for Fiscal Year 1994*. Nov. 30, 1993. Public Law 103-160.
- [6] Aspin, Les, Secretary of Defense,. Jan. 13, 1994. Memorandum for Secretary of the Army, Secretary of the Navy, Secretary of the Air Force, Chairman, Joint Chiefs of Staff, Assistant Secretary of Defense (Personnel and Readiness), Assistant Secretary of Defense Reserve Affairs. Subject: Direct Ground Combat and Assignment Rule.
- [7] Office of the Under Secretary of Defense Personnel and Readiness. Feb. 2012. *Report to Congress on the Review of Laws, Policies, and Regulations Restricting the Service of Female Members of the U.S. Armed Forces*.
- [8] Quester, George H. 1977. "Women in Combat." *International Security* 1 (4): 88-91. [http://www.jstor.org/stable/2538624?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/2538624?seq=1#page_scan_tab_contents).
- [9] Dharmapuri, S. 2011. "Just Add Women and Stir?" *Parameters - Journal of the United States Army War College* 41 (1): 56.
- [10] Harding, Tyra A. 2012. "Women in Combat Roles: Case Study of Female Engagement Teams." United States Army War College.
- [11] Approved Institutional Review Board Document. May 2014 Revision #1. *Ground Combat Element Integrated Task Force Experimental Assessment Plan*. Unclassified.

- [12] Dillman, Don A., Jolene D. Smyth, and Leah Melani Christian. 2009. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. 3 ed. Hoboken, NJ: John Wiley & Sons, Inc.
- [13] Strauss, David, Anita Hattiangadi, Warren Sutton, and Christine Whitmore. 2012. *Assessing the Implications of Possible Changes to Women in Service Restrictions: A Quick-Look Analysis of Survey Results*. CNA. DRM-2012-U-002586-Final.
- [14] Scantron Corporation. 2012. *Improving Survey Response Rates: Four Tactics To Increase Participation*.
- [15] Oracle, Inc. Mar. 2012. *Best Practices for Improving Survey Participation: An Oracle Best Practice Guide*.
- [16] Marshall, S. L. A. 1947. *Men Against Fire: The Problem of Battle Command in Future Wars*. New York: William Morrow.
- [17] Shils, Edward A., and Morris Janowitz. 1948. "Cohesion and Disintegration in the Wehrmacht in World War II." *Public Opinion Quarterly* 12: 280-315.
- [18] Henderson, William Darryl. 1985. *Cohesion: The Human Element in Combat*. Washington, DC: National Defense University Press.  
<http://www.au.af.mil/au/awc/awcgate/ndu/cohesion/index.htm>.
- [19] Siebold, Guy L. 2007. "The Essence of Military Group Cohesion." *Armed Forces and Society* 33 (2): 286-295.
- [20] Krosnick, J. A. 1999. "Survey Research." *Annual Review of Psychology* 50: 537-567.
- [21] Armstrong, J. Scott, and Terry S. Overton. 1977. "Estimating Nonresponse Bias in Mail Surveys." *Journal of Marketing Research* 14 (3): 396-402.  
<http://www.jstor.org/stable/3150783>.
- [22] Hayward, P. 1968. "The Measurement of Combat Effectiveness." *Operations Research* 16 (2): 314-323.
- [23] Joint Publication 1-02. Nov. 8, 2010, as amended through Mar. 15, 2015. *Department of Defense Dictionary of Military and Associated Terms*.
- [24] Office of the Chief of Naval Instruction 1530.6H. Jul. 3, 2014. *Officer Candidate Regulations*.
- [25] Mudrack, P.E. 1989. "Defining Group Cohesiveness: A Legacy of Confusion?" *Small Group Behavior* 20 (1): 37-49.
- [26] Tziner, A., and Y Vardi. 1982. "Effects of Command Style and Group Cohesiveness on the Performance of Self-Selected Tank Crews." *Journal of Applied Psychology* 67 (6): 769-775.
- [27] Tziner, A., and Y Vardi. 1983. "Ability as a Moderator between Cohesiveness and Tank Crews Performance." *Journal of Occupational Behavior* 4: 137-143.

- [28] Estabrooks, P. A., and A. V. Carron. 2000. "The Physical Activity Group Environment Questionnaire: An Instrument for the Assessment of Cohesion in Exercise Classes." *Group Dynamics: Theory, Practice, and Research* 4 (3): 230-243.
- [29] Marine Corps Doctrinal Publication 1. 1997. *Warfighting*.
- [30] MARADMIN 493-14. Sep. 30, 2014. *Announcement of Change to Assignment Policy for Primary MOS 0803, 0842, 0847, 2110, 2131, 2141, 2146, 2147, 2149, 7204 and 7212*.
- [31] Marine Corps Warfighting Publication 3-11.2 (with Change 1). Nov. 27, 2002. *Marine Rifle Squad*.
- [32] Marine Corps Warfighting Publication 3-12. Feb. 17, 2005. *Marine Corps Tank Employment*.
- [33] Marine Corps Warfighting Publication 3-13 (with Change 1). Feb. 17, 2007. *Employment of Amphibious Assault Vehicles (AAVs)*.
- [34] Marine Corps Warfighting Publication 3-14. Sep. 17, 2009. *Employment of the Light Armoured Vehicle Battalion*.
- [35] Marine Corps Warfighting Publication 3-11.1. Oct. 6, 2014. *Infantry Company Operations*.
- [36] Marine Corps Warfighting Publication 3-15.2. Oct. 9, 1992. *Tactical Employment of Mortars*.
- [37] Marine Corps Warfighting Publication 3-16.1. May 29, 2002. *Artillery Operations*.
- [38] Marine Corps Reference Publication 5-12D. Oct. 13, 1998. *Organization of Marine Corps Forces*.
- [39] R Development Core Team. 2008. *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. <http://www.R-project.org>.

This page intentionally left blank.



## **The CNA Corporation**

This report was written by CNA Corporation's Resource Analysis Division (RAD).

RAD provides analytical services—through empirical research, modeling, and simulation—to help develop, evaluate, and implement policies, practices, and programs that make people, budgets, and assets more effective and efficient. Major areas of research include health research and policy; energy and environment; manpower management; acquisition and cost; infrastructure; and military readiness.





CNA Corporation is a not-for-profit research organization that serves the public interest by providing in-depth analysis and result-oriented solutions to help government leaders choose the best course of action in setting policy and managing operations.

*Nobody gets closer—  
to the people, to the data, to the problem.*