

# THE FEMALE INFANTRYMAN: A POSSIBILITY?

Major (P) M. Nicholas Coppola, U.S. Army;  
Major Kevin G. LaFrance, U.S. Army; and  
Henry J. Carretta

**A**FEMALE INFANTRYMAN. There are few other oxymorons that could invoke an immediate visceral response from within the U.S. Army's infantry branch. However, the controversial issue of women as team members of combat Army infantry units is one that has surfaced again and will probably continue to be an issue in the new millennium. Twenty-five years ago it would have seemed improbable that women would serve in prominent support roles in Army units, flying jets, or on aircraft carriers. Seventy-five years ago the same would have been said about minorities serving in integrated units. Both events evolved because the trends in society proved to be an irresistible force that the military could not resist. The last 30 years has seen a dramatic change in the roles of women in American society. History suggests that the time will come when women may prove themselves in combat units. This article examines the issue of women serving in combat units and suggests an analytic methodology to use to examine the level of contribution and/or disruption female soldiers may have on combat teams.

Public policy and Federal law prevent women from serving in frontline combat units. Although 14 percent of the Active Army is comprised of women, females may only serve in combat support and combat service support units. Not allowing women to serve in combat units runs counter to trends in American society that show that women can perform equally with their male counterparts in law enforcement, firefighting, and other civilian occupations. The College Entrance Examination Board has predicted that applicants for the 2002 school year to 4-year colleges will be a 52:48 female-to-male ratio. Although the Army has aggressively recruited females in the last 10 years, female participation Armywide has not kept pace with civilian industry. This coincides with the Army's failure to meet its overall recruitment and retention goals in the late 1990s. Given these facts, excluding women from combat units might seem counterproductive. Facing similar problems and pressures, the Israel Defense Forces (IDF) began allowing females

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in its infantry and tank units in July 2001.<sup>1</sup>

The reasons for excluding women from infantry units espoused in Letters to the Editor of military newspapers generally include their lack of physical fitness and the negative effect their entrance would have on esprit de corps. Although these perceptions have existed for as long as the idea itself, these beliefs have never actually been tested.

In 1992, President George Bush became the first president in U.S. history to appoint a bipartisan task force to investigate the longstanding practice of excluding women from serving in combat units. The study concluded and unanimously reaffirmed the exclusion policy. The presidential commission reviewed several issues concerning women in frontline units, specifically, physical fitness and morale concerns pursuant to section 543(c) of the National Defense Authorization Act.<sup>2</sup>

One issue the commission addressed was whether women are physically suited to the rigors of ground combat. An unrelated study of West Point cadets suggested they are not. The study found that the top 20 percent of the female cadets achieved scores on the Army Physical Fitness Test (APFT) that were equivalent to the bottom 20 percent of the male cadets. The study also found that only 7 percent of the females met the minimum score of 60 of 100 points for upper body strength for push-ups.<sup>3</sup> The perception of a lack of physical fitness among female soldiers is an issue with men in combat arms units. However, whether this single factor is a good measure of endurance remains open.

A woman guerrilla in the Balkans, circa late 1940s.



*Without North Vietnamese female participation, the war might have ended differently. Vietnamese women were said to be “vital to the struggle” and credited with “carrying heavy loads over long distances.” They were also recognized as being able marksmen and snipers. . . . Likewise, Soviet women fought alongside their male counterparts as infantry soldiers in many desperate battles against the Nazis. Japanese women were recruited as infantry soldiers in high school and died in hand-to-hand combat during World War II campaigns.*

Both male and female basic training candidates in the U.S. Marine Corps (USMC) and the Army are required to pass a 72-hour final training exercise that simulates battle activities in an unforgiving combat environment. The USMC calls it the “Crucible,” and the Army calls it “Victory Forge.” Both exercises involve long road marches with full pack and equipment, provide limited opportunities for sleep and recovery, are engineered to inflict maximum emotional and physical stress, and are structured to require teamwork. Current graduation rates suggest there is no difference in success for either male or female Army or USMC candidates.<sup>4</sup>

The commission also addressed unit morale. It concluded that “teamwork matters more than individual capabilities in combat” and suggested that women’s presence might undermine teamwork and unit cohesion. Although there was no credible data to support this conclusion, it remains the basis for maintaining the status quo.

The presidential commission’s findings raise credible concerns about including women in combat teams. Without diminishing the potentially unique problems associated with women being in combat teams, it should be noted that similar issues have been raised in the past. Two hundred years of military social history is saturated with examples of excluding women from service. Deborah Samson is perhaps the first recognized woman to fight success-

fully for the American Army during the Revolutionary War. She disguised herself as a man and fought successfully in several campaigns and battles for more than 3 years. Loreta Velazquez successfully conducted a similar gender masquerade during the Civil War. World War I, World War II, Korea, Vietnam, Grenada, Panama, and Operation Desert Storm saw an increase in women’s use and availability in combat support roles. However, to date, no woman has served in an infantry unit.

Younger soldiers may not know that the Women’s Army Corps (WAC) existed as a separate entity from the Army until 1978. The WAC integrated smoothly and successfully into the modern Army, and few today even remember there was a separate corps for women. Furthermore, women were not allowed at the U.S. Military Academy, West Point, New York, until 1976. The first female graduates entered active duty in 1980 and have served commendably over the past 20 years. The Citadel did not allow females to enter its academy until 1995. Graduates from both institutions agree that female participation in the organizations enriched their experience. The Navy did not allow women to serve on combat ships until 1994. Although the Navy did experience growing pains during this integration, female participation has increased recruitment and had little effect on morale.

Scholars of the Vietnam war have suggested that



***A number of changes would be necessary to integrate women into a historically all-male environment. These changes also require time and money. The first requirement would be to place female drill sergeants in platoons where females are being trained. [F]emale drill sergeants would [also] need to be given basic training in infantry tactics and operations to help them train female soldiers.***

without North Vietnamese female participation, the war might have ended differently. Vietnamese women were said to be “vital to the struggle” and credited with “carrying heavy loads over long distances.” They were also recognized as being able marksmen and snipers. According to Sandra C. Taylor, author of *Vietnamese Women at War, Fighting for Ho Chi Minh and the Revolution*, “It was common knowledge among American soldiers in Vietnam that women were brave and ferocious fighters for the North.” According to Taylor, “These women were living out the ancient saying of their country—When war comes, even women have to fight.”<sup>5</sup>

Soviet women were flying aircraft in combat missions for the USSR in 1944, long before the first American female pilot was allowed into the U.S. Air Force. Likewise, Soviet women fought alongside their male counterparts as infantry soldiers in many desperate battles against the Nazis. Japanese women were recruited as infantry soldiers in high school and died in hand-to-hand combat during World War II campaigns.<sup>6</sup> Despite documented, tried, and proven examples of successful female integration into combat and infantry units in foreign countries, current U.S. policy continues to exclude females from similar opportunities.

### **Strategy** □

Proponents of the American status quo cite the commission’s concerns as previously outlined. Ex-

pressed in organizational behavior terms, these issues might be summarized as satisfaction, commitment, and performance. These concepts are familiar to the organizational behavior discipline and previous studies on team performance. Organizational behavior literature provides a useful framework for studying and understanding teams. For more than 35 years, Bruce Tuckman’s model has been the benchmark for encompassing existing models in team theory.<sup>7</sup> Tuckman’s model designates four stages of team development: forming, storming, norming, and performing.

Based on previous applications of this theory, it is anticipated that introducing women into infantry units will increase stress and affect performance. However, tension is normal and accepted behavior when forming teams, and it usually subsides over time. Eventually the unit will adjust, and optimal performance is achieved.<sup>8</sup> Satisfaction with coworkers, organizational commitment, team commitment, and performance are useful constructs for evaluating team performance in a military setting. These constructs are termed “latent” because they are conceptual and cannot easily be measured by any single factor. Latent constructs are best measured using multiple indicators and a multivariate statistical modeling technique called structural equation modeling.

The conceptual path model suggests that an infantry platoon’s latent construct of team performance

is affected by three other constructs: team commitment, organizational commitment, and satisfaction with coworkers. Each latent construct is measured by observable and measurable indicators. For example, satisfaction with coworkers is defined as the level of respect one has for his or her coworkers. Satisfaction with coworkers is measured as a reflection of the individual's feelings of self-worth and

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overall usefulness in his or her position within the team. This construct is measured through the Bell Object Relations Relative Testing Instrument scale and Jobs Diagnostic Survey.

Organizational commitment may be defined as the strength of an individual's loyalty, identification, and involvement in an organization.<sup>9</sup> The Department of Command Leadership and Management, U.S. Army War College, Carlisle Barracks, Pennsylvania, suggests that when individuals embrace the organization's goals, performance increases.<sup>10</sup> This construct is measured using the Organizational Commitment Questionnaire and Organizational Citizenship Behavior (OCB). OCB includes the extra gestures that lubricate the organization's social machinery.<sup>11</sup> These gestures may be measured by proxy through command observation such as volunteering for special assignments and participating in unit morale and esprit-de-corps events and activities.

U.S. Army Field Manual (FM) 22-100, *Army Leadership: Be, Know, Do*, defines team commitment as dedication to the first-echelon operating group the member belongs to in the environment.<sup>12</sup> Team commitment may be associated with feelings of individual failure or success when the team succeeds or fails. FM 22-100 describes the phenomena as transferring feelings from individual to team goals. The Army Command Climate Survey and Military Equal Opportunity Climate Survey measure this construct.<sup>13</sup>

Performance is operationalized as a latent outcome variable in the conceptual path model. Scholars have suggested that performance, as measured through outcomes, is perhaps the best methodology for measuring team functioning.<sup>14</sup> Teams that are familiar with one another improve their performance over time.<sup>15</sup> For example, initially, female cadets at

West Point and the Citadel met with considerable resistance and animosity from the corps of cadets. Eventually, both institutions accepted women, and the women's presence added to the richness of the military and academic experience.

This construct is measured by examining individual and group data. Individual quantitative data include the Expert Infantry Badge test, APFT, common task test, skill qualification test, and weapons qualification. Group quantitative data include reviewing the outcomes of squad and crew drills and external evaluations measured by Army Training and Evaluation Program standards. A panel of noncommissioned and commissioned officers prepare qualitative judgments of performance at both the group and individual levels using FM 22-100.

## Design □

This study assumes that Congress has authorized a 1-year study to examine the effects of women participating in combat units and that a sample of female volunteers from private, E1, through specialist, E4, is collected. The study is limited to volunteers at E4 and below because E5s have leadership responsibilities. Evaluating how females lead male combat soldiers is beyond the scope of this study. Soldiers who volunteer for this training must already be basic training graduates and be recommended by their unit commanders. The volunteers must also meet the minimum male APFT standards; volunteer to reclassify to military occupational specialty (MOS) 11B, infantry; and attend infantry advanced individual training (AIT). Women who successfully complete infantry AIT are then placed in platoons consisting of seven to nine females each. Data on the aforementioned constructs are collected every 4 months over the course of 1 year and compared with all other nonexperimental infantry platoons in the Army. The resulting research design appears as shown in the table. This methodology is similar to what the U.S. Army Physical Fitness School employs to evaluate trainee success on the APFT.<sup>16</sup>

Organizational behavior scholars have statistically analyzed similar types of data sets and have suggested that structural equation modeling is the best analytical tool for evaluating complex organizational behavior issues such as this one.<sup>17</sup> Scholars suggest that structural equation modeling provides a mechanism to define social interactions and associations more carefully.

Month	t1	t4	t8	t12	
Study population	X	O1	O2	O3	O4
Nonfemale combat units	N	O1	O2	O3	O4

X = platoons with female personnel  
 N = nonrandomized/nonequivalent comparison group  
 O = observations and data collection

**Costs** □

This proposal has certain costs associated with its implementation. The costs are crucial to the study's success and can cover three areas: structural, procedural, and survey. The structural costs are needed to modify existing male-only living facilities to accommodate female soldiers. This includes changing latrines and shower facilities, partitioning barracks space, and modifying security. Such facilities exist in units that already have female and male soldiers living in the same facility. Although the changes could be temporary, some facility modifications would be required.

Procedurally, a number of changes would be necessary to integrate women into a historically all-male environment. These changes also require time and money. The first requirement would be to place female drill sergeants in platoons where females are being trained. Reassigning female drill sergeants incurs permanent change of station (PCS) costs to get them to training installations. There also may be training costs associated with placing female drill sergeants in infantry training units. Specifically, female drill sergeants would need to be given basic training in infantry tactics and operations to help them train female soldiers. Additional PCS costs will be incurred when reassigning female soldiers on completion of the study, assuming that the female soldiers would not remain in the infantry units until the study results have been analyzed.

Since this is an experiment, the female soldiers participating in the study may need to be reclassified upon completion of their 1-year assignment with an infantry unit. This would cause additional training costs and might very well require an additional PCS move. Existing infantry drill sergeants would need training on how to conduct unit operations that involve both male and female soldiers. Although not an extensive training endeavor, there would be some costs incurred because of the drill instructors' time away from training.

As with any study, there are implementation costs. Specifically, the research team would require travel and time to coordinate, implement, facilitate, and monitor the study. This would include pre-study development, study execution, and post-study analysis. The study team's close coordination with all agencies involved would be critical to its success. Additionally, costs would be associated with training commanders on how to conduct the unit-level assessments outlined in the proposal. All commanders whose units are involved in the study could meet together to accomplish this training, or teams could visit the units at their installations to conduct training on the assessment process. Either approach has benefits, while both incur costs that reflect on the entire study.

Certain costs are necessary to implement the varied components of any research endeavor. The complex nature of the study proposed in this article would require dedicated resources to ensure the study's success. The suggested methodology would provide a streamlined research approach to providing significant insight into women's roles in a combat Army infantry team. The benefits of conducting this research would far exceed the acknowledged costs.

**Significance** □

This study may provide both practical and statistical support to further research efforts in this area. Although generalizations have been asserted regarding females participating in combat units, no proposal has ever been forwarded to test these assumptions. Few studies have attempted to conduct a multiple-trait, multiple-method structural equation model to judge performance with selected variables. Although the IDF recently integrated women into tank units, they did so without studying its potential impact on longer-lasting unit cohesion. This study allows for the impact of unit morale on performance. This research also contributes toward the refereed research on a topic of interest that contains little empirical material.

Most overlooked when discussing the potential of women in the infantry is volunteerism. Women who want to participate in the infantry will be volunteers. The standards for infantry performance are clear, and the expectations are well known. Trepidation about individual success in the infantry is itself a screening criteria and self-selection mechanism for many young recruits. Those who do not think they can handle the rigors of infantry life enlist in other specialties. Women should be allowed no less an opportunity to succeed. The Army already has a well-established, effective screening process for selecting qualified candidates for Ranger school, Special Forces training, and airborne and air assault courses.

Medical exams, physical fitness tests, and commanders' recommendations are also part of the application process. Women who desire to be part of an infantry unit should be subject to similar screening criteria before being allowed to participate in training. This study has recommended that women meet the minimum male standards for physical fitness. Additionally, female volunteers for infantry training in this study must be graduates of an AIT program and be successfully integrated into the Army before being allowed to volunteer for MOS reclassification. Perhaps after years of study and successful intervention, females will be allowed to enter directly into infantry units, similar to their male counterparts. Until then, this preparatory training is suggested.



The U.S. military has changed to keep pace with the social changes occurring in the United States. African Americans were segregated throughout World War II. Women were segregated until 1978. Women were not allowed to serve on Navy combat ships until 1994. The initial integration of these groups was accompanied by speculation about the appropriateness and likely success of these efforts. Time has demonstrated that integrating these cohorts has only improved readiness. Integrating females into infantry units may result in similar speculation of doom. However, until females are allowed to fail, the Army may not realize the increased readiness that may accompany their success.

Some critics may consider this proposal to be a social experiment. Perhaps this is true. Over the past several decades, women have tried to integrate into "traditional" male sports such as football and wrestling. Women's efforts at being competitive in these activities have largely been documented as being unsuccessful. However, females in law enforcement and firefighting have been successful when given the opportunity. Until women are given the opportunity to fail as infantryman, there will continue to be criticism of an exclusionary policy.

Despite the documented evidence of female success in both combat- and infantry-related units in foreign countries, American women remain barred from participating in infantry units in the U.S. Army. This article proposes how to test the feasibility of integrating women into infantry units. The proposal suggests a combination of individual, crew, and platoon tasks to measure various components of performance. Survey methodology and leader assessments are incorporated into a multiple-trait, multiple-method analysis. Study data is analyzed through structural equation modeling, and a conceptual model of this design is offered.

This article does not propose that women be integrated into infantry units. It proposes a methodology by which to study the potential of integration based on actual female test subjects. Measuring the impact of team performance is often cumbersome and lacks generality because of differing units of analysis. The Army offers a unique environment within which to measure team performance in a controlled environment and could provide the opportunity for women to prove themselves in infantry units. Given sufficient funding and support, this study is possible. *MR*

## NOTES

1. Israel Defense Forces, "Women's Service in the IDF—The New Chen (Women's Corps)," October, 2001, online at <www.idf.il/english/organization/chen/chen.stm>.
2. United States Presidential Commission on the Assignment of Women in the Armed Forces, *Women in Combat: Report to the President* (Washington, DC: Brassey's, 15 November 1992).
3. John Luddy, Background Update #230 updating Background Update #836, "Women in Combat: Why Rush to Judgment?" (Washington, DC: The Heritage Foundation, 14 June 1991).
4. Department of Defense, American Forces Press Service, "Right of Passage," October 2001, online at <www.defenselink.mil/specials/basic/>.
5. Sandra C. Taylor, *Vietnamese Women at War: Fighting for Ho Chi Minh and the Revolution* (Lawrence: University of Kansas Press, 1999).
6. Thomas R.H. Havens, *Valley of Darkness: The Japanese People and World War Two* (New York: W.W. Norton and Co., February 1978).
7. Bruce W. Tuckman, "Developmental Sequence in Small Groups," *Psychological Bulletin* (1965), 63:6.
8. John R. Katzenbach and Douglas K. Smith, *The Wisdom of Teams: Creating the High-Performance Organization* (Boston, MA: Harvard Business School, 1993); Stephen J. Zaccaro, James Gualtieri, and David Minionis, "Task Cohesion as a Facilitator of Team Decision Making Under Temporal Urgency," *Military Psychology* (February, 1995): 77-93; James W. Bishop and K. Dow Scott, "An Examination of Organizational and Team Commitment in a Self-Directed Team Environment," *Journal of Applied Psychology* (March 2000): 439-50; and M.D. Zalesny, E. Salas, and C. Prince, "Conceptual and Measurement Issues in Coordination: Implications for Team Behavior and Performance," *Research in Personnel and Human Resources Management*, vol. 13 (1995): 81-115.
9. S. Ornstein and L. Isabella, "Age Versus Stage Models of Career Attitudes of Women: A Partial Replication and Extension," *Journal of Vocational Behavior*, vol. 36 (1990): 1-9.

10. Robert Murphy, *Managing Strategic Change—Executive Overview of Management* (Carlisle Barracks, PA: U.S. Army War College, 2001); Richard T. Mowday, Lyman W. Porter, and Richard M. Steers, *Employee-Organization Linkages: The Psychology of Employee Commitment, Absenteeism, and Turnover* (New York: Academic Press, December 1981), 219-29; Richard T. Mowday et al., "The Measurement of Organizational Commitment," *Journal of Vocational Behavior*, vol. 14 (1979): 224-27; and Bishop and Scott, "An Examination of Organizational and Team Commitment in a Self-Directed Team Environment," *Journal of Applied Psychology*, 85(3) (2000): 439-50.
11. Daniel Katz and Robert L. Kahn, *The Social Psychology of Organizations* (New York: John Wiley, 1966).
12. U.S. Army Field Manual 22-100, *Army Leadership: Be, Know, Do* (Washington, DC: U.S. Government Printing Office (GPO), 31 August 1999).
13. U.S. Army Regulation 600-20, *Personnel—General Army Command Policy* (Washington, DC: GPO 15 July 1999).
14. Richard A. Guzzo and Marcus W. Dickson, "Teams in Organizations: Recent Research on Performance and Effectiveness," *Annual Review of Psychology*, vol. 47 (1996): 307-38.
15. John M. Ivancevich and Michael T. Matteson, *Organizational Behavior and Management*, 3d ed. (New York: Irwin McGraw-Hill, 1993).
16. F. Louis Tomasi and Gene Fober, *Fitness Training Unit Study on Chance of Success During Basic Combat Training—Predicted by Early Performance on the Army Physical Fitness Test—Linking Physical Fitness to "Success" and/or "Injury"* (Fort Benning, GA: U.S. Army Physical Fitness School, 1999).
17. Bishop and Scott; Michael S. Lewis-Beck, "Determining the Importance of an Independent Variable: A Path Analytic Solution," *Social Science Research*, vol. 3, 95-107; and Thomas Wan, *Evidence-Based Health Care Management—Multivariate Modeling Approaches* (Netherlands: Kluwer Publishers, 2002).

*Major (P) M. Nicholas Coppola, U.S. Army, is pursuing a doctorate degree at the Medical College of Virginia campus, Virginia Commonwealth University, Richmond, Virginia. He received a B.A. from the State University of New York, an M.S.A. from Central Michigan University, an M.H.A. from Baylor University and is a graduate of the U.S. Army Command and General Staff College. He has also served as career manager, U.S. Total Army Personnel Command, Alexandria, Virginia, and chief, Clinical Support Division, 121st General Hospital, Seoul, Korea.*

*Major Kevin G. LaFrance, U.S. Army is assistant professor of health care administration at the U.S. Army-Baylor University Graduate Program in Health Care Administration, Fort Sam Houston, Texas. He received a B.S. from Florida Institute of Technology, master's degrees from the Florida Institute of Technology and Syracuse University, and a Ph.D. from the University of Alabama at Birmingham. He is also a graduate of the U.S. Army Command and General Staff College. He has also served as executive officer and company commander, Southeast Regional Dental Command and Fort Gordon Dental Activity, Fort Gordon, Georgia.*

*Henry J. Carretta is a research instructor, Department of Health Administration, Virginia Commonwealth University. He received a B.A. from the University of Virginia, an M.P.H. from Eastern Virginia Medical School, and an A.B.D. from Virginia Commonwealth University. He has also served as research associate, Eastern Virginia Medical School, Norfolk, Virginia.*