

# **Technical Evaluation Report SAS-137 Research Symposium on Integration of Women into Ground Combat Units**

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**Dr. Ellen Haring**  
Technical Evaluator  
Service Women's Action Network  
UNITED STATES

[Ellen.haring@comcast.net](mailto:Ellen.haring@comcast.net)

**Dr. Karen D. Davis**  
Programme Committee Co-Chair  
Defence Research and Development  
Canada CANADA

[Karen.davis@forces.gc.ca](mailto:Karen.davis@forces.gc.ca)

**Ms. Laura Chewing**  
Programme Committee Co-Chair  
United States Marine Corps  
UNITED STATES

## ***ABSTRACT***

*This technical evaluation report summarizes the main contributions of the papers and their associated presentations given during the 2019 Research Symposium on Integration of Women into Ground Combat Units. It augments the papers collected in the proceedings, addresses the main points of keynotes not accompanied by a paper, and presents a summary of discussion and identified key insights of the two-day symposium, including contributions from six NATO countries, as well as Australia, India, and Japan. It recommends future activities based on the papers, presentations, and discussions summarized here.*

## **1.0 INTRODUCTION**

The prime purpose of a Research Symposium is to enhance the capability of the NATO Science and Technology (S&T) community to respond adequately to the military requirements of NATO. A Research Symposium results in a NATO Science and Technology Organization publication (Meeting Proceedings).

S&T Organization in the NATO context is defined as the selective and rigorous generation and application of state-of-the-art, validated knowledge for defence and security purposes. S&T activities embrace scientific research, technology development, transition, application and field-testing, experimentation and a range of related scientific activities that include systems engineering, operational research and analysis, synthesis, integration and validation of knowledge derived through the scientific method.

The mission of the NATO STO is to help position the Nations' and NATO's S&T investments as a strategic enabler of the knowledge and technology advantage for the defence and security posture of NATO Nations and partner Nations, by:

- Conducting and promoting S&T activities that augment and leverage the capabilities and programmes of the Alliance, of the NATO Nations and the partner Nations, in support of NATO's objectives;

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- Contributing to NATO's ability to enable and influence security- and defence-related capability development and threat mitigation in NATO Nations and partner Nations, in accordance with NATO policies;
- Supporting decision-making in the NATO Nations and NATO.

### The System Analysis and Studies Panel

The System Analysis and Studies (SAS) Panel conducts studies, analysis and information exchange activities that explore how operational capability can be provided and enhanced through the exploitation of new technologies, new forms of organization or new concepts of operation. Such studies will, where appropriate, give explicit consideration to financial and other resource issues.

The Panel will be responsive to requests for such studies from a variety of sources, including nations, the Science and Technology Board (STB), the Military Committee, the National Armament Directors (CNAD), the Main Armaments Groups, Allied Command Operations (ACO), Allied Command Transformation (ACT), the NATO Communications and Information Agency (NCIA), the NATO Industrial Advisory Group (NIAG), and industry.

The Panel will undertake activities to develop and promote improved analysis methods and techniques to support defence decision making. This aspect of the Panel's work will focus particularly on the methods required to address the new issues thrown up by the evolving strategic environment and the responses that both individual nations and NATO as a whole are making to it.

Women participate in ground close combat units in many NATO countries, and there is increasing interest among other NATO/PfP countries to expand the roles open to women. In support of new initiatives, as well as efforts to increase the representation of women in close ground combat units through enhanced selection, training, and retention strategies, the Symposium on Integration of Women into Ground Combat Units provided opportunity to share lessons learned, best practices, and research analysis and insights to support the expansion of combat roles for women and to better understand the impact of gender integration on ground combat units. The symposium further provided opportunity to explore the impact of the participation of women in ground combat units and male-dominated operational roles on international priorities related to Women, Peace and Security, including UNSCR 1325 (2000) and subsequent resolutions which call for increased participation of women in security forces.

The objectives of this symposium are to **share research and best practices regarding:**

1. The influence of social, cultural, and psychological factors of gender integration in ground close combat units and their impact on combat effectiveness.
2. Effective processes and strategies for the integration of women in ground close combat units.
3. Appropriate methodologies for monitoring, measurement and assessment of integration, including measurement of cohesion and inclusion.
4. Career and cohort management of women and men in combat roles.

This Technical Evaluation Report provides insights from the symposium to inform the ongoing SAS-120 activity as well as provide NATO and partner nations not participating in the SAS-120 activity with lessons learned, best practices, and research analysis and insights to support the expansion of combat roles for women and to better understand the impact of gender integration on ground combat units. It reflects the interpretation of the evaluators and has been conducted with utmost scientific rigor. However, as the presented efforts are on the leading edge of science and research conducted in support of NATO, the reader is encouraged to carefully study the report itself and conduct additional research to ensure the maximal benefit.

Two parallel sessions occurred during the conference. Session 1 was principally comprised of research that focused on the social, cultural and psychological aspects of integration. Session 2, Day 1 was comprised of research on physical employment standards while Day 2 included a variety of additional topics related to integration. Analysis of the papers and presentations is organized by themes. Theme 1 analysis includes research, papers and presentations focused on social, cultural and psychological aspects of integration while theme 2 includes topics associated with employment standards and training.

## **2.0 KEYNOTES**

The keynote speakers and their presentations set the framework for the symposium at the beginning of the first day, as they provided complementary views and experiences related to the role of women in the military and their final integration into ground combat units. The first keynote introduced the topic by highlighting the limits, changes and challenges of women's increased participation in national military units by providing a historical overview of women's integration and tracing her own experiences as an early US Naval Academy graduate.

The second keynote focused the discussion more directly on women's integration into ground combat units by highlighting her experiences as the first woman to become a Canadian Defence Force (CDF) infantry officer in the 1990s. Canada was one of the first countries to open their infantry units to women and the keynote highlighted the obstacles and barriers that she faced when trying to integrate traditionally all male infantry units.

These two presentations are summarized in this section. Neither presentation was accompanied by a paper although the second speaker has published a memoir that chronicles her experiences.

### **2.1 Lieutenant General Lori E. Reynolds, Deputy Commandant for Information, US Marine Corps**

The two-day event was framed by General Lori Reynolds when she provided an overview of the integration of women in the US military from the founding of the United States as a nation to today. The history of women in the US military is marked by slow but steady inclusion in the national military Services. General Reynolds focused in greater detail on the changes that have occurred in the last 30 years since her graduation from the US Naval Academy in 1986. She noted that when she graduated women were not allowed to access many military occupations and that she could not serve on Navy ships, submarines or fly most military aircraft. Today, all of the occupations and positions that were closed to her are now open to women.

She emphasized the important relationship between diversity and increased military effectiveness noting that despite the known benefits of diversity many military members and their units continue to resist full integration.

### **2.2 Sandra Perron (Major, retired), Building on Leadership and Diversity, Canada**

This invited presentation was delivered by Sandra Perron; the first Canadian women to officially serve openly as an infantry officer. Perron discussed her experiences integrating the Canadian infantry in the 1990s as an experience that was met with high levels of resistance and outright hostility. Like General Reynolds she discussed the research on diversity and its impact on team capabilities. She called attention to long lasting gender roles and stereotypes that make integration extremely difficult. However, she noted that with performance and perseverance women are able to make inroads into traditionally all male organizations.

She presented 4 possible strategies that women might employ as they integrate and that the strategies may not be mutually exclusive. They are: 1) Put up and Shut Up, 2) Protest/Fight It, 3) Leave, 4) Become Competent. She emphasized the importance of setting appropriate physical standards and meeting them, of operational

effectiveness and of group cohesion. Despite persevering for many years Perron left the military in 1996 “after enduring unrelenting abuse from her fellow military officers who didn’t want women in combat arms.”

Both keynote discussions focused on the need to highlight the power and increased effectiveness of diverse groups and teams and their resulting impacts on improved combat effectiveness for the military. Both women provided stories of overt and covert resistance to their inclusion in military units.

### **3.0 THEME 1 – SOCIAL, CULTURAL AND PSYCHOLOGICAL IMPACTS OF INTEGRATION**

#### **3.1 Combat Integration Handbook, Antonieta Rico, Women in International Security, USA**

The first presentation was delivered by Antonieta Rico, a Fellow at Women in International Security. The Combat Integration Handbook is a reference guide for U.S. Army combat arms leaders on how to successfully lead gender integration in their units. The Handbook exclusively addresses common challenges with gender integration in combat arms units and gives leaders and Soldiers best practices for successfully navigating the change process.

Research for the Handbook came from over 30 hours of exclusive interviews with Cultural Support Team members, women who were attached to Special Operations units in Afghanistan; more than a half dozen individual interviews with combat arms officers and NCOs; and a Working Group of over 20 active duty Army officers and NCOs from across the US Army, who provided experience, input and feedback to the handbook. It also drew on raw data from a Maneuver Center of Excellence survey of 816 officers from the Command and General Staff College Intermediate Level Education, which included the officer's views and concerns about women in combat. Finally, the Handbook draws on other U.S. Army Studies.

The Handbook is comprised of two principle sections; Cultural Considerations and Practical Considerations. Rico highlighted several key sub sections of the Handbook in her discussion starting with the important and pivotal role that leaders play in successful integration.

<https://www.wiisglobal.org/combat-integration-initiative/combat-integration-handbook/>

#### **3.2 Conformist Culture and Tolerance of Diversity, LCol Maureen Wellwood, Canadian Armed Forces**

Wellwood provided a thought-provoking presentation on the difficulty of creating diverse and inclusive organizations within the existing restrictive and conformist cultures of the existing military organizations. She argues that existing personnel policy and training systems are set up to ensure conformity and that they systemically resist diversity-oriented policies and approaches to inclusion. Wellwood recommends changes that begin with the way soldiers are trained from the point of induction onward. Specifically, she recommends diverse training strategies that accommodate various cognitive learning styles and abilities including more advanced use of media, audio visual aids, training spaces that include seclusion, social learning techniques, and simultaneous physical simulation techniques.

#### **3.3 Self and Other: Perceptions of Military Performance of Men and Women in the Bundeswehr, Dr. Gerhard Küemmel (presenter) and Timo, Graf Centre of Military History and Social Sciences, Germany**

Kummel provides a brief overview of women’s inclusion in to the German armed forces including the relatively recent legal challenge that opened combat jobs and units to women. In January 2000, the European

Court of Justice ruled in favour of a woman who was trying to access a combat support position in the German Army. The case resulted in all positions being opened to women although progress has been slow. Kummel's research focused on the perceptions of men and women about their own abilities, those of their peers and those of the opposite sex. Men tend to have more favourable views of their own performance than women have of their own performance. This trend holds in a number of evaluative categories where men assess themselves and other men to be above average while women assess themselves and other women as average or below. When men assess women 27% think that women's performance is worse than men's performance with younger soldiers and non-commissioned officers from the Army and combat occupations rating them the most negatively. Scepticism and resistance to women's integration is most likely to come from the very units that women are currently attempting to integrate.

Increased confidence and performance for women was correlated to maturity, education and experience. Although the authors do not make any specific recommendations relative to their findings a possible recommendation might be that women who are assessing into newly opened units be older, better educated and have more experience in the military.

### **3.4 Team D+ Innovation in Diversity, Col Stephane Boucher, Canadian Armed Forces**

This paper outlines a grass roots initiative of the 2<sup>nd</sup> Canadian Division Group called Team Diversity+ or Team D+. It was organically created by volunteers to meet the goals of the Canadian Armed Forces Diversity Strategy published in 2017. The group has created an informal communications channel to leadership to elevate group goals and concerns of a diverse community. It is unclear what the impact has been of this initiative. However, like other organically created initiatives it is likely to be beneficial within the context of the organization where it was created but may not be replicable in other organizations.

### **3.5 Women in Combat: Stress, Social Support and Health, Major Angela Yarnell, US Army**

Yarnell and a team of researchers fill a research gap by examining the stress impact on men and women in deployed combat environments. They analysed a matched sample of surveys from deployed men and women to determine the health impacts of combat deployment. While women reported significantly less combat exposure, they did not differ from men in other stressful life events during deployment. For health and functioning, women reported significantly more somatic symptoms and sick call visits than men, yet did not differ significantly on several other physical health variables. Health outcomes investigated in relation to combat exposure, found men but not women reported significantly greater functional impairment as the number of combat exposures increased. Both males and females reported more somatic symptoms, more sick call visits, greater difficulty falling asleep and sleeping less than six hours per night as combat exposures increased. Importantly, the association between combat exposure and several health variables were similar for males and females.

Defining, understanding, and fostering social support is necessary for men and women to ensure readiness for military missions by reducing effects of stress on health. While combat stress manifested similarly in men and women, they found that women reported significantly lower unit morale, unit cohesion, and marital quality than men. This may explain women's increased somatic symptoms and sick call visits since social support is a protective factor.

### **3.6 Gender Integration and Citizenship: A Civil-Military Perspective, Dr. Brad Wineman, US Marine Corps University**

Wineman summarized many of the ongoing arguments against women's integration into combat arms which he boils down into two main arguments that are based on physiology and readiness. He dismisses both sets of arguments by illustrating their changing nature over time or the inability to actually define the term readiness.

He goes on to note that the military has been consistently resistant to any change that it views as socially or politically motivated. He invites us, instead, to consider the question of the duties and responsibilities of citizenship and the civilian-military gap. He argues that including women in all areas of the military increases the available pool of talent and thus capabilities and decreases the civilian-military gap.

### **3.7 NATO Representative for Women, Peace and Security, LT Andrea Goldstein, US Navy**

Goldstein provided an overview of NATO's current efforts and structure that support the goals outlined in UN Security Council Resolution 1325 and its subsequent Women, Peace and Security resolutions. NATO created a Gender Task Force and has positions for trained Gender Advisors (GENAD) and Gender Focal Points (GFP) throughout the organization. NATO has also created a number of directive documents that require NATO countries to meet specific goals and objectives. Additionally, countries are required to report annually on the status of women in their military's. The result has been increased opportunities and participation of women across NATO and NATO partner nations. This presentation was not accompanied by a paper.

### **3.8 Integration of women into ground combat units – Slovenia as an example of a successful but a small country, Liliana Brožič and Col Mojca Pešec (presenter), Slovenian Armed Forces**

Pešec presents Slovenia as an example of a small country that has successfully integrated women into all areas of its armed forces with a high degree of success. For a success indicator she points to Slovenia's rank among NATO nations in terms of percentage of women (6<sup>th</sup>) who serve, and in retention rates for women (4<sup>th</sup>) relative to other NATO nations. However, while Slovenia does comparatively well women remain a fractional minority of their military at less than 17% of their force and the majority of women serve in a few key combat support specialties where they outnumber men; in finance, legal and medical specialties. Also, in the last 10 years less than 10% of any mission has been comprised of women and the Slovenian military offers no programs specific to women. Notably however, Slovenia has one of the only woman Defense Ministers in NATO.

### **3.9 The Integration of Women into the Australian Army Infantry Corps: Dimensions for Success, Dr. Samantha Crompvoets and BRIG Leigh Wilton, Australia**

This original research provides a comprehensive picture of the early integration efforts of the first enlisted women to enter the Royal Australian Infantry Corps. Her role has been to research, monitor and evaluate, and make corrective recommendations to integration efforts. This integration effort has experienced many missteps including failing to provide women with appropriate equipment and information, training opportunity disparities, and hostile work environments. Most of the first group of women are leaving the infantry. Australia has taken some corrective actions. Crompvoets and her team make several recommendations for improved integration including: provide direct mentorship for women, help establish peer support groups, provide clear job and fitness standards, educate leadership and ensure that women remain co-located with their teams.

### **3.10 Infantry Perceptions and Potential Mitigation of Women Joining the UK Infantry, Dr. Joanna Harvey, Great Britain**

This presentation provided an overview of research that examined the perceptions and expectations of various demographic groups in the British military to the integration of women into ground combat units. The purpose of the research was to understand how to affect large scale culture change by identifying mitigating factors and learning points. The data is being used to aid in planning for integration.

Key themes emerged from male cohorts that mirror similar points of resistance and cultural factors already identified in research in the USA<sup>1</sup> and Canada<sup>2</sup> and is summarized in the presentation provided by Dr.

Wineman. Cultural points of resistance relate to concerns about any change that is viewed as politically driven, perceived to lower standards due to differentials in physical strength and stamina, reduce readiness because of possible increased injury rates, or reduce unit cohesion because of fraternization due to intimate relationships, etc. The UK is using this information to develop a set of mitigation strategies including a well planned and executed communications strategy, scientifically based physical employment standards, and no quotas that would give the appearance of preferential treatment. This presentation was not accompanied by a paper.

### **3.11 Understanding Differences in Experiences between Enlisted Women and Officers, Antonieta Rico, Women in International Security, USA**

This original research highlights the differences in treatment and experiences of women officers relative to enlisted women who have newly integrated ground combat units in the US Army. It is based on interviews and surveys from 10 women officers and 10 enlisted women. A key finding is that enlisted women face harassment and assault at levels not experienced by women officers, while simultaneously having fewer resources and support systems necessary to cope with their experiences. This significantly degrades their ability to succeed as they integrate combat arms units. Furthermore, the Leaders First policy, a policy intended to assist with integration has done little to address the problems experienced by enlisted women and may be detrimental to women officers' career advancement. The purpose of the policy was to provide same sex peer mentors for junior women but the officers are themselves junior officers and they have not provided the envisioned mentorship.

Recommendations for improving integration were provided in the briefing but not in the accompanying paper. They include eliminating the Leaders First policy and instead implementing a peer bonding program to create social support networks during initial entry training followed by assigning enlisted women in cohorts to new units. Screening and training male leaders on their duties and responsibilities relative to successful integration and monitoring unit climates.

### **3.12 Promoting Active Participation of Women in Japan Ground Self Defence Force: Female Integration into Close Combat Units, LTC Junko Araki, Japan**

Although Japan's official position is that all positions in their Ground Self Defence Force (GSDF) have been open to women since 1993 it wasn't until 2017 that women were actually assessed into some of the ground close combat occupation and in 2018 women remained a fractional minority of the force at just 7% with a goal of reaching 9% by 2027. To encourage women's increased participation the GSDF has focused on improved childcare and maternity/paternity leave. However, the envisioned improvements lag behind those already in place in most NATO nations. Another policy established to increase women's retention is the provision for up to a three-year leave of absence with guaranteed reemployment. No data was provided to show if these policies are having a positive impact on recruiting and retention.

### **3.13 UK Approach to Women in Ground Close Combat, WO1 Gareth Bowen, Great Britain**

This presentation provided the historical background to women's military service in Great Britain with a focus on recent efforts to open all remaining closed occupations in the ground combat forces. In order to overcome resistance to women's inclusion in ground combat units, outlined earlier in the day by Harvey, Great Britain is taking a similar approach to other NATO nations by messaging the benefits of an increased and diverse talent pool that enhance operational capabilities while simultaneously focusing on setting job-based gender-neutral physical standards with no quotas for women's inclusion. This presentation was not accompanied by a paper.

### **3.14 Why make a special platoon for women? An assessment of The Jegertroppen at the Norwegian Special Operations Commando (NORSOC), Frank Brundtland Steder, Norway**

This paper documents and critically evaluates Norway's Special Operations Command's experiment with creating a women-only training program. The experiment was conceived by the special operations community as a way to make military service more attractive to women thereby increasing the percentage of women in the total force. It successfully relied on attracting women to a "special" and elite training program. The program has yielded a cadre of highly motivated, specially trained elite women soldiers. However, it is a highly gendered program in was conceived not to bring qualified women into the special operations community except when it is necessary to interact with local women during military operations. Despite demonstrating extraordinary capabilities, including beating all male teams during team-based missions the women have not been assessed into NORSOC as anticipated. Instead they have become disillusioned because few of them have actually been integrated into NORSOC and they are not being retained as anticipated.

### **3.15 The Queen Bees and the Women's Team: Why Make a Special Platoon for Women? Frank Brundtland Steder, Norway**

This research builds on data captured during the Jegertroppen experiment from the previous presentation. Researchers observed that behaviors often attributed to women who are in competition with each other in close quarters exhibit behavior commonly called "queen bee" behavior that is marked by gossip and undercutting other women. However, the women in the Jegertroppen did not exhibit such behavior; quite the opposite. Not only did they work collaboratively but they established close personal relationships that were mutually supporting and supportive. The researchers determined that "queen bee" behavior is actually only evident in contexts in which a high degree of masculine conformity is required. They conclude that when diversity is valued queen bee behavior is not necessary for success and therefore it is context dependent. This research dispels stereotypical myths about women "natural" tendencies to behave a certain way by showing that it is actually gender based stereo type threat that accounts for some women exhibiting "queen bee" behavior.

### **3.16 Socio-Cultural Change in Gender and Military Contexts: Measuring Values, Dr. Karen D. Davis (presenter) and Dr. Ann-Renee Blais, Defence Research and Development, Canada**

Davis provides an examination of the forces which both stabilize and may cause change within military organizations. While she notes that culture is the single most important element to understanding military units and a critical factor relative to women's inclusion in ground combat units it is rarely researched and remains almost unexamined. Although the Canadian Armed Forces and the Canadian Army have done some surveys and have created broad based initiatives like *Strong, Secure, Engaged* they have not included a research component that would indicate if such initiatives are having the desired effect.

### **3.17 Challenges of Integration of Women in Peacekeeping Operations, Dr. Shilpi Nanglu, India**

Nanglu presents research on the experiences of women who have been assigned to peacekeeping operations. Similar to other research findings related to women who are integrating ground combat units women who deploy on peacekeeping missions experience marginalization through limited job opportunities, underutilization and harassment. At the same time, they struggle to cope with family and childcare responsibilities for the families that they leave behind. The result is that few women participate in peacekeeping missions, at a time when their presence is needed to address challenges that are better addressed by a diverse force.



### **3.18 Architecting a Paradigm Shift to Further Invest in Human Capital, LTC Kristina L. Richardson, USA**

This paper documents the process by which the US Army's Special Operations Command determined that existing standards were already valid and gender neutral after they were directed to ensure that their standards were science based not gender based. The author uncritically asserts that previously existing standards were already gender free since women had not been allowed to assess into those occupations. She does not challenge, as others (Riley) have done, the fact that standards that are developed for men are likely gendered masculine from the outset. Simply validating standards that were developed by men, for men, are likely highly gendered.

## **4.0 SESSION 2 – PHYSICAL STANDARDS AND TRAINING**

### **4.1 USMC Combat Arms Physical Screening, Brian McGuire, US Marine Corps, USA**

The objective of this presentation was to provide an update and overview of the USMC physical screening methodology. In 2014 and 2015, in anticipation of opening combat specialties to women, occupation specific standards methodology was developed and validated for Infantry, Artillery, Tanks, Amphibious Vehicles, Low Altitude Air Defense, Combat Engineers and Ground Ordnance Maintenance. By way of outcome example, recent data indicates that the MOS Specific Physical Standards (MSPS) pass rate for men and women infantry candidates is 99.5 and 81.5%, respectively. Administered on a regular basis to members of the above MOS, the MSPS has been developed to be gender neutral, operationally relevant, maintain combat readiness, enhance the full potential of every Marine, and sustain the quality of the Force going forward.

### **4.2 Combat Integration: Implications for Physical Employment Standards, Dr. Tara Reilly, Canada; Dr. Sam Blacker, Great Britain; Mrs Marilyn Sharp, USA; Dr. Jace Drain, Australia; and Dr Keith Hauret, USA.**

This panel included five presentations related to physical employment standards (PES) and the integration of women into combat roles, thus providing insight into the ongoing work of NATO Human Factors and Medicine (HFM) Research Task Group (RTG) 269, Combat Integration and Physical Employment Standards. The panel began with a review of current practices across NATO nations, primarily from Canada, UK, USA and Australia, the relationship between established standards and the occupational demands, male and female physical strength and endurance capabilities, and biases in related practices and research (Blacker and Reilly). The second presentation highlighted sex differences in physical fitness tests of military members, including in the performance of physically demanding military occupational tasks. The presentation identified tests with the least bias while maintaining predictive capability, noting that some tests are maintained for historical/cultural reasons but may falsely identify females as incapable of performing at a minimum standard (Sharp). Highlighting the limited availability of longitudinal research specific to musculoskeletal (MSKI) female injury rates, the third presentation identified several modifiable factors (body mass, lean body mass, training status, experience) with potential to contribute to injury prevention. Further, it was emphasized that as women move through combat arms training, employment, and deployment, there is an opportunity to identify training methods that will optimize performance on occupational tasks, as well as reduce injury among female combat arms soldiers (Drain and Hauret). Available research also suggests that combined resistance and aerobic training programs will improve the performance of females in physically demanding occupations. The fourth presentation reviewed recent research, suggesting that a minimum of six months training using job-specific exercises for load carriage, with an emphasis on upper body strength and power, is necessary to prepare females for combat occupations. Importantly, research demonstrates that females are capable of significantly improving performance, and narrowing the performance gap between female and male candidates, with the right type of preparation and training (Drain, Blacker, and Sharp). Focusing on Canadian Armed Forces PES, which has been established as bias free and best practice at the minimal acceptable performance standard, the

final presentation explored incentive strategy to encourage higher levels of performance. A strategy that relies upon sex and age categories was discussed, including the potential for effectiveness and bias (Reilly).

The final goal of RTG HFM 269 is to produce a technical report with practical recommendations for designing PES, supported by a comprehensive compendium of available research which addresses performance impacts and outcomes by sex. Given the significant impact of physical performance standards and practices on the physical effectiveness, well-being, acceptance, and success of female soldiers, this panel highlighted the importance of evidence-based knowledge, policy, and practice to guide the introduction of women into combat occupations and units.

#### **4.3 Implementation of A Hybrid Pushup/Pullup Test on the USMC Physical Fitness Test, Brian McGuire, US Marine Corps, USA**

This presentation provided an overview of the physical fitness testing (PFT) requirements of the USMC, from 1909 to 2018, noting that a 5 kilometre rowing option was implemented in 2016 as an optional alternative to running for all USMC members over 45 years of age, regardless of gender. The main focus of the presentation was the development of the hybrid pushup/pullup option which allows all members of the USMC, regardless of gender, to select either a pushup or pullup testing option. Originally developed, to provide better options for women to aspire to, and achieve, optimum upper body strength, 2016 data indicates that most women choose the pullup option and perform an average of 7 pullups at testing. The presentation emphasized the significance of this initiative to gender integration, along with the strong correlation of the hybrid option to performance on physically demanding tasks.

#### **4.4 RAF Regiment Training, Flt Lt Jon Griffin, Great Britain**

This presentation provided an overview of the recruitment and training processes and standards for the Royal Air Force Regiment and its recent efforts to integrate women. Although there has been some interest by women only three women have qualified, leading one to question either the efforts to recruit qualified women, set gender neutral job-based standards, or to set conditions for them to succeed once selected for training are appropriate. This presentation was not accompanied by a paper.

### **5.0 SUMMARY AND RECOMMENDATIONS**

The objective of this symposium was to provide a forum to identify and gain input on best practices for the further integration of women into ground combat units of NATO and NATO partner nations. Many countries appear to be following similar strategies and practices for integrating women into ground combat units. However, while they take similar approaches little research shows whether these common practices are, or should be identified as “Best Practices”. For example, the US “Leaders First” policy was touted as a “best practice” but subsequent research by Rico finds that it may be harming efforts to integrate women and not be a “best practice” that other countries should follow. Similarly, there is an almost myopic focus on setting “gender free” or “gender neutral” occupational standards but there has been no established “best practice” for setting said standards. The result is that there are no two countries with the same standards for what are inherently identical jobs. Any efforts to set common standards results in countries attempting to exceptionalize themselves thereby removing any requirement to conform to a common set of “best practices”.

No country advanced a set of “best practices” although some common approaches to integration were revealed in the research and presentations. The common approaches respond to recurring themes relative to integration. Furthermore, the fact that there is no identified best practices reveals monitoring and evaluation shortfalls and research gaps.

Rather than identifying “best practices” that may or may not, in fact, be best practices the following list is a set of common approaches to gender integration followed by most countries:

1. Most countries have engaged in relooking and either updating or validating ground combat occupational standards to ensure that they are gender neutral and are applied to men and women equally
2. Most countries have pledged not to set quotas for women to avoid appearing to lower standards to admit more women.
3. Most countries have engaged in messaging that touts the benefits of increased capabilities brought by a larger recruiting pool and diverse talent.

Some emerging approaches that may turn out to be best practices, if they are validated by further research include the following:

1. Screening women recruits: increased success, as measured by performance and confidence has been linked to maturity, education and experience leading to the conclusion that women might be more successful if they are older, better educated and knowledgeable about what they are getting themselves into (Crompvoets).
2. Nearly all research has pointed to the importance of leader attitudes in successful integration. Careful leader screening and selection along with gender integration education was highlighted in several research efforts (Rico; Crompvoets; Boucher; Harvey) and was seen to positively or negatively correlate to successful integration.
3. Several researchers noted the importance of social support to successful integration for women. Rico recommends eliminating a Leaders First approach which was intended to be a provide institutionally based mentorship but instead implementing a peer bonding program to create social support networks during initial entry training and then assigning enlisted women in cohorts to new units. Dr Yarnell’s research demonstrates the importance of social support networks as a protective mental and physical health factor (Rico; Yarnell; Crompvoets).
4. Most military organizations recognize the need to reduce injuries and optimize performance but do not prioritize it for women (Crompvoets; Rico). A few countries have now designed and issued women specific equipment to optimize women’s performance and reduce injuries.

### **Recurring Sub-themes**

Resistance to women’s inclusion in ground combat units has been repeatedly studied as countries have prepared to integrate their ground combat units. There is a great deal of cross-cultural consistency relative to resistance which was succinctly summarized by Wineman in his presentation. Despite existing studies that outline the known areas of resistance countries continue to look at their own points of resistance. Harvey’s research in the UK is yet another study that arrives at the same conclusions as previous studies on resistance in countries that have already integrated. NATO may want to encourage nations to spend their research dollars on moving beyond this research area to fill other research gaps.

Diversity discussions figured heavily in many presentations with most citing studies that show increased capabilities with more diverse teams. Linking women’s participation to increased capabilities is a strategic communications strategy being used to combat resistance but it may not be having the intended effects. There is a growing body of research that shows that training that is based on this line of reasoning not only not help, but may actually decrease acceptance<sup>3</sup> to diverse teams.

High rates of harassment and assault against service women has been systematically documented across NATO nations in recent years. Therefore, it should come as no surprise that ongoing harassment, marginalization and underutilization of qualified women is driving women out of ground combat units. Research by Rico (US) and Cromptvoets (Australia) reveal that qualified enlisted women are facing situations of extreme harassment that is causing them to reclassify out of ground combat occupations or to leave the military altogether. Research by Steder reveals that women who qualified for special operations units are not being utilized and are being sent back to the regular operational force. These women have expressed disillusionment due to a “dead end” opportunity that is causing them to leave the military when they are not allowed to actually serve in special operations units. Similarly, Nanglu found that women peacekeepers are subordinated to more traditional support jobs and have limited job assignment opportunities.

### **Research Gaps**

Although women have been integrated into ground combat occupations and units in some countries for many years little is known about their impact on the units or the impact on the women. Monitoring and evaluation seems to end abruptly after the first few years of integration has occurred (Davis). There is still no research that examines how women may or may not have impacted operational effectiveness. Research Questions: What has been the impact of women on ground combat units? What has been the impact on the women who have integrated ground combat units?

Physical standards and women’s injury rates were two topics that figured frequently in research and presentations while little attention is paid to women specific equipment or training that might enhance women’s performance and reduce injury rates. Cromptvoets points to women specific equipment that is available in Australia but was not issued while other countries seem blind to the requirement to develop equipment at all that might enhance women’s performance and reduce injuries. Research Questions: What women specific equipment is available across NATO and how does it impact performance and injury rates? What are the commonly agreed upon physical requirements for the same or similar occupations in NATO military formations?

Much of the research uncritically accepts existing masculine norms as gender neutral standards without examining the gendered nature of the norms themselves. Women are simply expected to conform or assimilate (Davis) into the existing masculine paradigm. Research presented at the conference found several difficulties with this expectation most notably that it creates a sort of double bind for women (Steder). They are expected to be exactly like men but bring something new and unique to the organization that make their presence valuable. Steder’s research highlights how this has impacted service women in Norway and the training conundrum it presents. Research Questions: What methods or steps yield the best outcomes for entry level training and subsequent integration? What sets women up for success in newly integrated units? What conditions allow some women to thrive and others to fail?

### **Participant and Committee Review of Presentations and Papers<sup>1</sup>**

Further to the review and analysis provided by the technical evaluation and the programme committee, symposium participants were asked to evaluate the presentations against the objectives identified for the symposium. Based on review of 22 presentations, participants determined that a significant proportion addressed cultural (35%) and social (38%) influences, a smaller proportion addressed psychological factors (20%), and a small proportion (7%) were assessed as not reflecting the key objectives of the symposium (Figure 1). Programme committee review of presentations reflect similar patterns, with slightly more emphasis on cultural influences and less on psychological.

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<sup>1</sup> Appreciation is extended to Mr. Frank Steder for development of the on-line evaluation tool and aggregate analyses of data resulting from symposium participant and committee evaluations of presentations and papers,

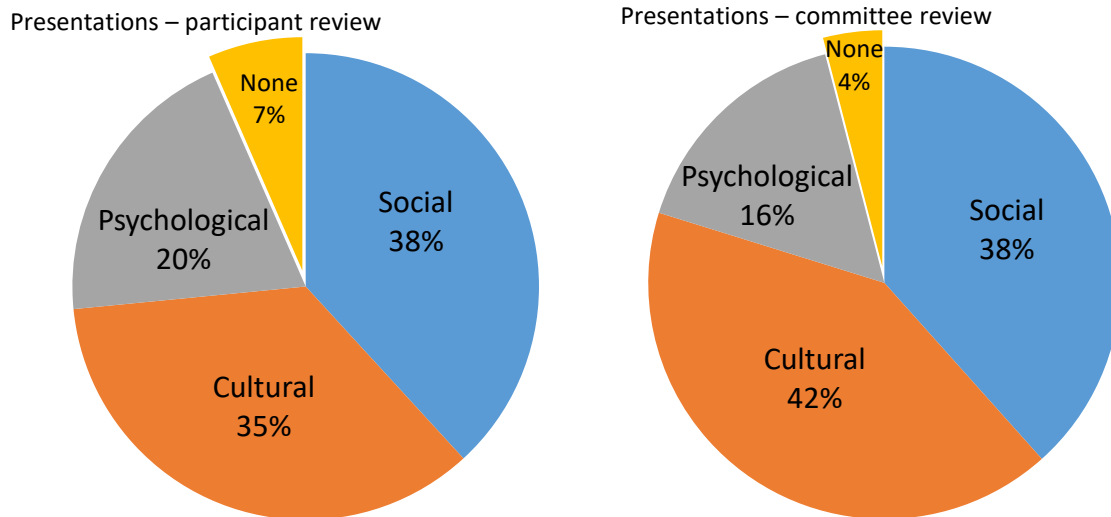


Figure 1: Participant and Committee Review of Symposium Presentations

The programme committee review of all papers (N=16) that were submitted (Figure 2) reinforced the observations presented throughout this report. When assessed in aggregate, on a three-point scale, with one indicating “no” and three indicating “a lot”, symposium papers provided “some” relevant research and analysis, knowledge, strategies for integration, and insights into the impact of gender integration on combat units. While additional research and analysis would be valuable in all domains, the evaluation highlighted particular research gaps related to cohort management, the measurement and monitoring of integration, and lessons learned/best practices to support the integration of women into combat roles and units. Although not a specific objective of the symposium, the HFM 269 panel on PES also highlighted significant research gaps in areas with particular impact on women in combat occupations and units. Notwithstanding the need for further research, the knowledge and information shared through the symposium presentations and papers provide valuable contribution to the final report of SAS 120, Integration of Women into Combat Units.

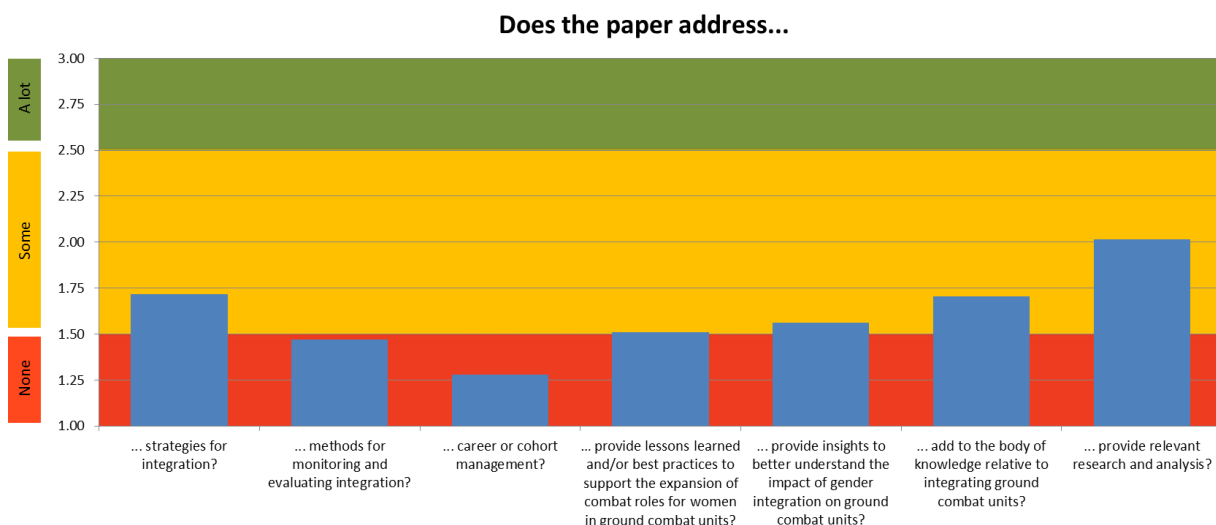


Figure 2: Programme Committee Review of Papers Submitted to SAS-137

### Recommendations

NATO should host a resource portal where countries can post original research and review the research of other countries as they seek to integrate their ground combat units or increase the percentages of women.

NATO should identify and publish a set of minimum physical occupational standards for common ground combat occupations like “infanteer” or “tanker” to reduce extreme standards designed to keep most, otherwise qualified women out of ground combat occupations.

NATO should publish a set of research gaps to help countries identify what research remains and what questions have already been answered and by whom.

### REFERENCES

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<sup>1</sup> Arnhart, Lynette, Blair Crosswhite, Jennifer Jebo, Michael Jessee, Dominic Johnson, Sara Lechtenberg-Kasten, Peter Kerekanich,, Amy McGrath, and Blair Williams. "Gender Integration Study." U.S. Army TRADOC Analysis Center. April 2015.

<sup>2</sup> Davis, Karen D. DAVIS, K. D. and Virginia Thomas. Chief Land Staff Gender Integration Study: The Experience of Women Who Have Served in the Combat Arms, Canada, National Defence, Personnel Research Team Sponsor Research Report 98-1, 1998.

<sup>3</sup> Bregman, Peter, March 12, 2012, Harvard Business Review, “Diversity Training Doesn’t Work”, <https://hbr.org/2012/03/diversity-training-doesnt-work>; and, Llopis, Glen, January 16, 2017, Forbes, “5 Reasons Diversity And Inclusion Fails” <https://www.forbes.com/sites/glennllopis/2017/01/16/5-reasons-diversity-and-inclusion-fails/#7ce2135d50df>