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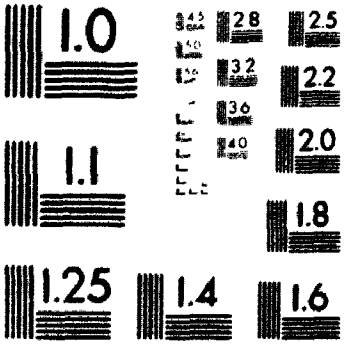

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THE CONTACT HYPOTHESIS AND FACTORS AFFECTING THE INTEGRATION OF WOMEN IN THE CANADIAN MILITARY

by

CARALYNN A. STROM

A thesis submitted to

the Faculty of Graduate Studies and Research

in partial fulfilment of

the requirements of the degree of

Master of Arts

Department of Psychology

Carleton University

Ottawa, Ontario

February 1, 1993

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THE CONTACT HYPOTHESIS AND FACTORS AFFECTING THE INTEGRATION OF WOMEN IN THE CANADIAN MILITARY

submitted by Caralynn A. Strom, B.A.
in partial fulfilment of the requirements for
the degree of Master of Arts

Thesis Advisor

Chair, Department of Psychology

Carleton University
21 March 1993

ABSTRACT

Effective February, 1989, the Canadian Military became obliged by law to integrate women into all occupations and roles, with the exception of employment aboard submarines. To understand better the integration process, this study applied the contact hypothesis in analyzing the characteristics of the women and the conditions under which contact takes place. Royle's adaptation of Cook's theoretical model of the contact hypothesis and contact variables was used to assist in the gathering of the data and the analysis. A sample of 102 servicewomen employed in the Militia answered a questionnaire that tapped information applicable to the contact hypothesis. Of the personal and situational variables measured, the Social or Group climate measures contributed the most to the regression analysis. Recommendations for further research regarding servicewomen's integration in the Canadian military are discussed.

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Introduction

Women have participated in Canadian military efforts for more than 100 years. Trained nurses served with troops in Saskatchewan during the 1885 Northwest rebellion and later Canadian Army nurses served with the Canadian contingent in the Boer War (1899-1902). During World War I nurses were incorporated into the Canadian Army Medical Corps and were subsequently mobilized in 1914 to serve overseas. They were demobilized after the War (Nickolson, 1975).

In 1941 and 1942, in support of the Canadian military commitment to the Allied Forces, the official women's divisions of the Army, Navy and Air Force were created within the Canadian military. For the first time in the history of the Canadian army servicewomen were actively recruited to be trained for both traditional as well as non-traditional skilled mechanical and electrical blue-collar jobs. This action was a direct response to serious manpower shortages and pressure by women's paramilitary volunteer organizations (Pierson, 1988). During World War II there were more than 45,000 women on active service, constituting 1.4% of the fighting forces. In comparison to service in World War I women were serving in expanded roles. However, complementary to prevailing 1940's social attitudes, women were excluded and exempted from combat and therefore no women served on ships, aircraft or as first line ground troops (Pierson, 1983). By all accounts, women's military service employment paralleled

women's role and place in society at the time: having a secondary status and supportive role in keeping with gender-appropriate characteristics. Despite the expanded employment opportunities the majority of women volunteering for service typically sought out and were employed in clerical or housekeeping jobs (kitchen workers, fabric workers, drivers, telephone operators). The women's motto was: "We Serve that Men May Fight" (Pierson, 1988).

The end of World War II resulted in a massive, overall demobilization of the Canadian military. However, the creation of NATO in 1949 and Canada's military commitment to the Korean conflict in 1950 necessitated the continued recruitment of women into the Militia[1] and all branches of the Armed Services from 1951-1955. Where in 1955 there were 5,000 women in uniform, by 1965 the participation of women had been reduced to an upper ceiling of 1,500 due to the changing defence policy and the introduction of a computerized personnel administration system. This move to a more sophisticated administration system effectively reduced the demand for administrative personnel, an occupation group that was predominantly women (Conrod, 1983).

The Royal Commission on the Status of Women was convened in 1967 to review Canadian women's involvement in society and

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[1] For the purposes of this document the Militia is the Army (Land) element of the Reserve Force. Members typically, but not always, serve on a part-time, call-out basis. That is, they have usually secured other full-time employment and are available to serve in a part-time capacity or, in the case of a national emergency, are readily available as a trained force.

industry. Concerned with the inequitable employment practices based on sex, including the restricted employment fields allowed for women in the military, the report made six recommendations concerning the military all of which have been implemented since its publication. The six recommendations were: (1) standardization of enrolment criteria; (2) equal pension benefits for men and women; (3) attendance of women at Canadian military colleges; (4) the termination of the practice prohibiting married women from enrolment in the Canadian Forces; and, (5) cessation of automatically releasing a servicewoman upon the birth of her child. The sixth, and the most encompassing recommendation made by the Commission, was that all military trades and officer classifications should be open to women. In response to the Royal Commission, on July 5, 1971, military policy was "that there was to be no limitation on the employment of women in the Canadian Forces other than within the primary combat roles, employment at remote locations and seagoing service." (cited in Conrod, 1983).

In 1974 the Department of National Defence reviewed the educational and physical requirements for all military occupations and implemented radical changes to its hiring and employment practices based on gender requirements. These changes resulted in a partial compliance to the Commission's recommendations by opening training and employment in "non-traditional" trades to women. Nonetheless, the military

continued to retain a quota system of "female" recruiting so as to maintain a pool of trained men for continued postings to primary combat and combat-support, isolation, sea and aircrew duties where women continued to be restricted from employment. In the end, these hiring practices resulted in a dramatic change in the composition of the Canadian Armed Forces. As a result of the expansion, women could now be considered for two-thirds versus one-fifth of all military occupations available in 1971. Coinciding with a decrease of young men interested in joining the military, the number of women in the Forces increased dramatically from 1,654 or 2.0% of the total Forces' strength of 82,700 in 1970 to 5,413 or 6.9% of the overall strength of 78,434 in 1980 (Park, 1984).

In the past 20 years employment options for women in the military have expanded as much as in the larger Canadian society (Strom, 1991; Harper, 1990). Whereas traditionally women have been recruited for the military for nursing, administration, clerical and other static employments, such as telephone operator, in the past two decades there have been revolutionary changes in these practices. In the past twenty years women have been invited to apply for enrolment in the military and to train and be employed in non-traditional technical trades and first-line combat duties. Such has also been the case in the greater Canadian society. Through affirmative action programs women have been actively recruited for training and employment as certified craftsmen in blue

collar occupations such as: mechanic, electrician and carpenter. Military human resources statistics reveal there were 9,024 women (1,785 officers, 7,239 noncommissioned members) or 10.9% of 35,554 personnel in fulltime Regular Force employment in 1991 (Tanner, 1991).

Despite progress, in 1980, with the enactment of the Canadian Human Rights Act (1978), the Canadian Armed Forces was compelled to rethink personnel policy that continued to restrict the employment of servicewomen. In direct response to the ruling that "sex is not a permissible reason for discrimination unless it is based upon a bona fide occupational requirement" (Canadian Human Rights Commission, 1986), the Canadian Forces undertook a five year longitudinal study to evaluate the "human consequences, if any, of introducing servicewomen into previously male roles and environments" (National Defence Headquarters Instruction, 1979, p.3).

A landmark study which commenced in 1980, the SWINTER trials, (acronym for Service Women in Non-Traditional Environments and Roles) integrated women in the Regular component of the Canadian Forces into 'near-combat' environments in the field, at isolated sites and at sea for testing purposes. The purpose of the study and the Social/Behaviourial Sciences evaluations were threefold:

a. to identify the social/individual consequences of using the mixed-gender concept;

b. to advise command staff on those human factors as well as methodological features which could bias the evaluation and outcome of the trial employment; and,

c. to ensure defensible results by providing advice to command staff and by conducting a specific Social Behaviourial Science evaluation upon which future policy decisions could be made (Park, 1986, p.7).

By 1985, approximately 280 women had collectively contributed to the five-year study. They had served six-month tours of duty at Alert, an isolated northern station in the Arctic, two-year postings at sea aboard a diving tender, four-year postings with the land element in the field with two combat service support units in Germany and as aircrew at five transport or transport and rescue squadrons. It is the favourable outcomes of the study, specifically, that being female does not appear to contribute to poor individual or group performance for the groups and settings studied (Park 1984) that is cited in legal arguments supporting the expanded and unrestricted employment of servicewomen (Charter Task Group, 1986; Gauthier, Houlden, Gauthier & Brown, 1989).

Despite the positive outcomes of the SWINTER trials, it took a Canadian Human Rights Commission (CHRC) tribunal decision in February 1989, (Gauthier et al.) to legally oblige the Canadian Armed Forces to open all occupations and employment opportunities equally to both men and women. In this case, three women and one man alleged that the Canadian Armed Forces had discriminated against them by denying them access to training and jobs on the basis of their sex.

As a result of the tribunal decision, the Department of

National Defence was ordered and held responsible to achieve full integration, with the exception of submarine duty.[2] While recognizing the magnitude of such a change to the organization and its personnel, the CHRC has stipulated that integration would be undertaken with "due speed, as a matter of principle and as a matter of practice, for both active and reserve forces" (Gauthier et al. 1989, p.64). It specified the time limit for full integration to be within ten years and set up procedures for achieving this goal. In particular, the Tribunal ordered:

a. that policy be implemented for full integration of women into all units and occupations closed to them;

b. the removal of all restrictions from both operational and personnel considerations and that the minimum male requirements be phased out; and,

c. an internal and external monitoring of policy be put in place with the appropriate and immediate modifications.

Given the CHRC ruling, the policies governing personnel management need to be reconsidered in order to ensure the effective employment of all personnel in mixed-gender units (Lamerson, 1987). In many cases, it means that women will be entering working groups and settings that were closed to them just three years ago. Such is the case of women entering near-combat support and combat positions. For many military policymakers and strategists the influx of women into

---

[2] Women continue to be restricted from submariner duty because privacy is impossible for mixed-gender crews in such a limited environment. The acquisition of ships designed for mixed-gender employment will require that the restriction be reviewed.

previously restricted occupations is a cause for concern, particularly in combat positions (Mitchell, 1989; Willett, 1990).

Arguments against women in combat and near combat have emphasized women's lesser physiological capabilities in comparison to that of men and have questioned women's psychological ability to withstand the stresses of combat. The ability of men and women to work effectively as a team during training and combat is held in doubt. Scepticism about women's contribution to group tasks is perpetuated by the belief in the power of "male bonding" and the debilitating influence of a woman's presence on the morale, cohesion and ultimately the effective performance of the military (Marlowe, 1983; Mitchell, 1989). Tuten (1982) expands on the male-female anthropometric differences and makes the following argument about men and women who have had the advantage of comparable physical training:

> "At their respective physical peaks, the male will have increased his relative physical superiority over the female. Thus, immutable physiological differences favour the employment of men in tasks that require physical strength, speed, power, and endurance. Few would deny that these physical attributes are essential to the soldier or marine in ground combat. Closing with the enemy and destroying him is a very physical endeavour, and modern technology has not changed that at all--nor is it likely to. Therefore, without even coming to psychological, sociological or management considerations, we can support a major conclusion: The exclusion of women from front-line ground combat is mandated by their lesser physical capabilities." (p.247).

Those who support an expanded role for women in the

military refute the restriction/exclusion arguments by addressing the weaknesses of such a position (Robinson, 1986; Segal, 1983). In particular, the arguments raised against women typically treat women as a class of people rather than as individuals with diverse talents and capabilities. Recognizing individual differences in physical capabilities and psychological preparedness will still allow many women to meet the profile for combat positions. Equal citizenship and the opportunity, if not expectation, for all citizens to participate in the defence of their country is another important point. This is made clear when one recognizes that the exclusion of women in the military serves not only as a major barrier to career advancement but also adversely affects women achieving full status as citizens. Concerns about the potential disruptions to the interpersonal relationships and cohesion of all male combat units are dismissed as speculative (Segal, 1982). In conclusion, Segal adds:

> "One point is clear: if men believe that women are not part of their group and that they cannot function with women around, this belief will disrupt such functioning and may hinder actual ability to cope with stress of combat, thereby serving as a self-fulfilling prophecy." (Segal, 1982, p.278)

Cohesion is a central theme in the debate about a fully integrated military force. In the social psychological literature, cohesion has been defined as a critical feature of groups. The classic definition of cohesion refers to the forces that bind the members of the group together, including

the member's willingness to stay in the group and their level of satisfaction and efficiency when part of the group (Ridgeway, 1983). Experimental social research of nonmilitary men and women in simulated groups examines the differences between men's and women's attributes, behaviours and resultant interactions in mixed-gender task groups (Dion, 1985; Brewer & Miller, 1984; Colwill, 1982). This research, however, does not address cohesion specifically where men and women work together. For example, Dion (1985), in a comprehensive review of gender and groups addresses the question of why the sex variable has generally been neglected by social psychologists studying small groups. In addition, he points to the reluctance of small group researchers to include women as subjects much less manipulate gender ratio composition.

In field research on cohesion within the military, the focus has been on all-male groups. Griffith (1988), studied soldiers in the United States Army in order "to clarify the operational and conceptual definitions of military unit cohesion by developing measures of small-unit cohesion." p. 149. Stouffer et al. (1949) conducted studies of morale and combat effectiveness during World War II whereas Nelson & Berry (1968) investigated the cohesion in all-male Marine recruit platoons. More recently, Fowler (1979) reported that soldiers in the Vietnam conflict demonstrated strong group cohesion primarily as a means of sustenance during combat thereby increasing the odds for group survival.

Research that considers the impact of the ratio of men to women on small group dynamics is much less prevalent. The literature reveals that there have been few opportunities to investigate, much less manipulate, mixed group composition and its effects on mixed-gender group cohesion in a military setting. In the mid 1970's the United States Army Research Institute carried out experimental research (MAXWAC) with newly formed mixed-gender support units and gathered information about unit performance after varying the number of women participants. Project Athena, a 4-year longitudinal study (1976-1980) of the integration of the U.S. Military Academy at West Point did not endeavour to manipulate the number of women in small groups but took ratios into account in reporting results (Yoder, Adams & Prince, 1983). Considering the ratio of women to men over the four-year period Yoder et al. concluded that as the number of women increased at West Point from 2% to 8%, problems associated with tokenism experienced by the initial group were alleviated. Over the four years as women became more integrated into the ranks of the cadet hierarchy their increased numbers and appointments to positions of leadership and control contributed to less visibility of the women as a group.

Some ethnographic researchers have chosen to focus on the woman's perspective of her experiences as a newcomer to male dominated/exclusive occupations to understand better the

dynamics of male/female working relationships. Braid (1980) conducted in-depth interviews with women in non-traditional blue-collar jobs in British Columbia, the Yukon and Ontario. Women working in the building construction trades in the United States were the focus of ethnographic research by Riemer (1979) whereas Ross (1979) collected information on the experiences of women working in management in internationally renowned cities. Moskos (1985) made on-site observations and interviewed American Army female military personnel in mixed-gender units during operations in Honduras. Moskos' account of the servicewomen's experiences is rich and informative although largely impressionistic. Based on his observations and interview material he concluded that women soldiers, both noncommissioned ranks and officers, when placed in field deployment situations undertaking non-traditional tasks do much better than expected.

For those charged with policymaking and defence strategy the mandated changes to employment practices will result in restructuring and reformulating several long held policies and practices. If new policy is to be properly implemented there is also a need to understand the human and organizational dynamics that will facilitate the entry of women into non-traditional occupations and employment settings. The dynamics of group relationships and the process by which the newcomer becomes incorporated as a member of the group has long been of interest to both psychologists and sociologists (Nieva &

Gutek, 1981; Colwill, 1982).

Social psychologists have contributed to the literature on integration through work on the contact hypothesis. This line of research was developed in response to questions on the impact of intergroup contact on the changing of attitudes and ethnic relations. Allport's equal status contact hypothesis detailed in Nature of Prejudice (1954), concluded that contact alone would not guarantee intergroup harmony and establish the conditions for its occurrence. Specifically, there is a requirement for prolonged contact with cooperative activity involving common goals. A framework of official institutional support is necessary in order to create "the kind of social climate" in which more tolerant norms emerge. Finally, contact must be between people of equal social status and power.

Amir (1969), in a study of the integration of ethnic groups, supported Allport's original formulation. Again, contact alone could not initiate a change in attitudes and the subsequent desired positive behaviour. Such changes are conditional on five favourable environmental conditions, namely: (1) an authority support for integration, (2) equal status contact, (3) the degree of the contact, (4) nature of contact and, (5) the establishment of superordinate goals. Amir also identified unfavourable conditions of contact as instances when contact causes competition between groups, where members of one group have a lower status than the other

group and in cases where a group's prestige or status is threatened by the contact. Contact that is unpleasant, involuntary or tension laden is an obstacle to positive integration. Such is the case where members of a group or the groups as a whole are in a state of frustration or where the groups in contact have moral or ethnic standards which are objectionable to each other. All of these are representative of conditions that have a negative effect on helping to change negative attitudes towards minority groups. Rajecki (1982) points out that these conditions are not based on any specific theory of contact but rather are conditions Amir found to be helpful or hurtful in changes to intergroup attitudes through his empirical research.

Cook's Model

Cook (1969, 1971), from his experimental work on inter-ethnic contact, analyzed and integrated variables of the contact hypothesis. A descriptive model of unintended racial contact was developed in which the interrelationships between variables which influence prejudice and discrimination are synthesized. The model elaborated on the conditions under which the contact between majority (white) and minority (nonwhite) groups brought about positive attitude change and the reduction of conflict between the groups. These conditions include the characteristics of the persons involved and the nature of the contact situation. Table 1 identifies

the category of variables and the corresponding examples proposed by Cook (1969).

Cook took his analysis of contact to be influenced by several categories of variables having to do with the minority, the majority, and the conditions under which contact occurred. It is these specific variables that Cook theorized affected positive outcomes.

Situational-Personal. These variables describe the minority in the contact setting. For example, the extent to which the minority person contradicts stereotypes about their group and manifests valued social traits, such as friendliness, helpfulness and honesty. Also included is the extent to which the minority member holds similar attitudes and values to the majority group member. If both groups have a similar social economic status and similar level of education this is also thought to enhance acceptance and tolerance of individuals of the minority group.

Situational-Setting. Characteristics of the setting, namely equal relative status in the contact situation and a higher proportion of minority group members, are expected to produce positive outcomes.

Contextual-Social Environment. This category of variables describes attributes of the majority group members in the contact situation. For example, this includes the class disliked norms of the majority group with respect to the beliefs about associating with members of the minority group.

Table 1

Variables Affecting Intergroup Contact

as Proposed by Cook (1969)

Category of Variable	Variable
Situational-Personal	-Similarity to stereotype -Positive social traits -Similarity of beliefs -Socio-economic status and education
Situational-Setting	-Relative status -Percentage of minority
Contextual-Social Environment	-Peer group norms and importance of peer group -Views of persons with reward power and linkage to person's behaviour
Contextual-Nonsocial Environment	-Physical proximity -Acquaintance potential -Interdependence requirements
Person	-Racial attitudes -Perceptions of this particular minority person and setting
Person-Contextual Attributes	-Needs and motives -Personality traits and mechanisms -Values -Cognitive characteristics
Outcomes*** Intermediate	-Degree and type of interdependence -Degree of intimacy
Outcomes*** Final	-Attraction to person and esteem or respect of person -Attraction to class and esteem or respect of class

Source: M.J. Boyle (1983) Factors Affecting the Integration of Women into Marine Corps Units, p. 11. Adapted from S.W. Cook (1969) Motives in a conceptual analysis of attitude-related behavior. In W.J. Arnold & D. Levine (Eds). Nebraska Symposium on Motivation: Lincoln Univeristy of Nebraska Press.

Also included as an influence in the outcomes are the views of persons with reward and punishment power, perhaps a supervisor. Cook considered the linkage this influential power has on the behaviour of the majority group members. He suggested that positive group norms and positive views about minority group members on the part of persons with reward and punishment power contributed to a positive adjustment of majority group member's behaviour towards the minority group members.

Contextual-Nonsocial Environment. These variables correspond to the physical arrangements and activities which have a consequence on behaviour in the situation. Included are the physical proximity, acquaintance potential and interdependence requirements of the working environment. To explain, physical proximity refers to the variations in the physical distance or closeness between the two groups. This is dictated by the work setting rather than the choice of the individuals in contact. Acquaintance potential corresponds to the opportunities to interact with minority group members as individuals. Interdependence refers to the extent the work setting fosters a cooperative work arrangement. Cook anticipated that the combination of physical proximity, acquaintance potential and the interdependence of the work setting would make outcomes more positive.

Person. In Cook's model, Person variables refer to the racial attitudes of the majority group towards the minority

group. Positive outcomes would result from positive racial attitudes and positive perceptions of the minority group, which in turn, influence perceptions of the environment.

Person-Contextual Attributes. In addition to the category specifying attitudes (Person Variable) Cook expanded this to include a category of variables for majority group members identified in several ways. These included needs and motives, such as need for approval, affiliation, need-achievement and economic need; personality traits and mechanisms, such as, self-esteem, anxiety, ego-defence; values, such as, justice, religious brotherhood and government by law; and, cognitive characteristics, such as concrete versus abstract cognitive organization, complex versus simple cognitive structure and open versus closed mindedness.

Outcomes. Cook conceptualized the integration process as happening in stages: before contact, initial contact, contact after some participation and after contact. Outcomes are defined in terms of these stages and are identified as Intermediate and Final. Intermediate Outcomes takes place during the initial contact and during subsequent opportunities for social interaction between minority and majority group members. This phase includes the degree and type of interdependence required to complete a common goal. The second dimension of interaction is the degree of intimacy in the contact. This was described by Cook as "a function of the nature of the conversation and information exchange that

develops." (Cook, 1969, p.218). To explain better, the dimension ranges from personal and intimate to impersonal and public conversation. These Intermediate Outcomes are influenced both by the characteristics of the person and those of the setting. This in turn, influences the Final Outcomes; that is, the attitudes and behaviours towards the minority group members as individuals and as a class.

The Final Outcomes are measured by two dimensions: (1) attraction to the minority individual and/or minority group and (2) esteem or respect of the disliked individual and/or minority group. The Final Outcome variables were a measure of the majority group's perceptions of the minority group as a result of intergroup contact.

Adaptation of Cook by Royle

Cook's model of the contact hypothesis has had utility in examining the dynamics of the integration process for women as newcomers to a male dominated work group (Defleur, 1985; Guns, 1985). As part of a longitudinal study, Royle (1983) applied Cook's descriptive model, but with modifications to help determine the factors that affect the integration and the attrition of women in the United States Marine Corps. Table 2 details the measures and modifications made in Royle's study.

Situational-Personal. Royle proposed that positive outcomes would occur when women in the group differed from the

Table 2

Variables Affecting Intergroup Contact and their Measures

(Royle 1983)

Category of Variable	Variable	Modification or Measure
Situational Personal	Similarity to stereotype	Traditional or non-traditional job Technical skills Physical strength Job skills Male group experience
	Positive Social traits	Appearance Cooperativeness
	Similarity of Beliefs	Attitude toward women's role Experience working with men
	Socio-economic status and education	Socio-economic status Education
Situational Setting	Relative status	Enlisted rank Supervisory status Sex of supervisor
	Percentage of minority	Proportion of women
Contextual Social	Peer group norms and importance of peers	Group attitudes about women Marines
	Views of persons with reward power	Supervisor's attitudes Command attitudes Women in chain of command
	Group climate	Group climate Openness
Contextual Nonsocial	Physical proximity, Acquaintance potential, and Interdependence requirements	Longevity in the group Group size Staffing level Interchangeability Flexibility to structure work Teamwork required
Outcomes Intermediate	Interdependence	Demonstrated helping Woman's centrality to group
	Intimacy	Non-work contact
Outcomes Final	Attraction to person and Esteem of person	Harassment Woman's feelings of acceptance Attrition
	Attraction to class and Esteem of class	Attitude change toward women Marines

Source: M.J. Royle (1983). Factors Affecting the Integration of Women into Marine Corps Units, p. 33. Claremont, Calif: Unpublished Manuscript.

stereotypes associated with women employed in "men's work", exhibited positive social traits and were similar to male servicemen in beliefs, social economic status and level of education. How the woman differed from stereotypes was measured in several ways; the traditionality or non-traditionality of her job, the woman's technical competence, and whether or not she possessed physical strength. The woman's job skills were self-assessed in comparison to her male peers. In addition, the woman indicated if she had previous experience working and/or cohabiting with men. Positive social traits were measured by her appearance and cooperativeness. Information about the woman's social economic status and level of education was identified from her Unit Personal File.

Situational-Setting. Positive outcomes would occur when women held positions of greater status in the group and the group had higher proportions of women. Relative status was measured by the woman's rank in the organization, such as, Private, Corporal for enlisted personnel and Lieutenant, Captain for officers. Other measures included her supervisory status and the sex of her supervisor.

Contextual-Social Environment. Positive outcomes would occur when the woman's male peers, supervisor and commander held positive attitudes about the role of women, including having women in positions of power in the chain of command. Royle chose to extend Cook's model of the contact hypothesis

by incorporating scales developed by Moos (1975b), the Military Company Environment Inventory (MCEI), to evaluate group or social climate. From these measures, Royle proposed that groups that were open and had supportive group climates would be more accepting and display positive behaviour towards servicewomen.

Contextual-Nonsocial Environment. Royle expressed a special interest in exploring the nonsocial characteristics of the work group and initiated a special effort to develop measures associated with physical proximity, acquaintance potential and interdependence requirements. Based on the model, it was proposed that positive outcomes would occur when groups were small, were relatively understaffed and where women had been members of the group for a lengthy period of time. In addition, the flexibility to structure work, situations where members were less interchangeable and the necessity of teamwork to complete the tasks were also measured.

Person and Person-Contextual Attributes. Because it was not considered feasible to measure the prejudices of individual existing group members, Royle did not include measures of the men's attitudes towards women or measures of Needs and Motives, Personality Traits, Values or Cognitive Characteristics.

Outcomes***Intermediate. The positive outcomes of interdependence was measured by the help a woman received on

the job and her centrality to the group. Intimacy was reflected in her non-work association and contact with colleagues.

Outcomes***Final. The positive outcomes Attraction to the person and esteem or respect for the person were measured by the amount of physical and verbal harassment received by the woman on and off the job, her feelings of acceptance and her attrition. Attraction to women as a class and esteem for women as a class were measured by the supervisor's responses to changes of attitude and/or behaviour of the group towards Marine Corps servicewomen.

Though initially Royle intended that the source of information on the aforementioned variables would be direct observation of women and men, she later rejected this idea as impractical, since the women were employed worldwide. As a reasonable alternative, and in an effort to curb bias, information concerning most of the variables was gathered from both the women and their supervisors through questionnaires.

The results of Royle's research indicated that specific variables measuring Personal and Situational Characteristics had a significant effect on both the Intermediate and Final Outcome variables. The women who were given help were those who were relatively new to the group and who were perceived as less able and in need of help. Further, these groups had a measured positive group climate. Women were found to occupy more central positions in their group when they were assessed

as good performers; that is to say, they were technically competent and had good interpersonal skills. These women held a relatively high rank, had previous work experience with males, worked in flexible group settings and were in groups that were open to newcomers. Women who were included in non-work settings were identified as good performers in their jobs. In addition they came from the larger work groups which were assessed as being open to newcomers.

Group climate and women's performance both related to harassment and acceptance. Women did not identify harassment as a problem when working in groups that had a positive group climate, when their work performance was given a positive rating and when they had peers and supervisors that had a positive attitude towards women and their employment in the Marines. Women who volunteered to go into combat, who had previous work experience with males and who were assessed as good performers working in a positive group climate felt more accepted than other women.

Attitudes towards women as a group resulted in a positive change when group members interacted with what they viewed as technically competent and socially skilled women. Other contributing factors to attitude change included that the women being willing to go into combat and that there be flexibility in completing group work assignments. Attitudes became more positive when women worked in groups that were open to newcomers and there was a positive group climate.

Attrition was not predicted by any variable in the study. There was no relationship of group size, staffing level and interchangeability of staff to outcomes. Similarly, the relative status variables, which included measures of the women's rank, supervisory status and sex of the supervisor, had little or no relationship to outcomes.

In summary, the woman's technical competence, her social skills and willingness to help in the group were the personal characteristics that contributed most to integration. The attitudes of her peers and supervisors, the assessment of group climate as well as the flexibility the group had to complete assignments were the situational variables that most contributed to integration.

While Royle hypothesized that work groups would be more accepting of women when the groups had a higher proportion of women this did not prove to be a significant condition in her study. This is, however, contrary to past research in the military (Woelfel & Schreiber, 1979; DeFleur 1985; Oliver, 1981) and other organizations (Kanter, 1977; Spangle, Gordon & Pipkin, 1978). Given the past and ongoing attention to Kanter's 'tokenism' theory and its impact on individual and group behaviour the proportion of minority to majority in working groups as proposed by Cook (1971) continues to have merit.

The focus of the present study is on specific characteristics of the women in the Canadian Armed Forces

Militia (the Land Forces (Army) of the Primary Reserve), and the working groups in which they are employed. The Militia has the task of providing combat units and support services. For more than 15 years women in the Militia have been employed in non-traditional occupations, including integrating them as augmentee staff with the Regular Force in the field. Within the mixed-gender implementation plans set forth by Force Mobile Command (FMC) it is acknowledged that in the Militia "the presence of women in arms units is not new". Because of this, the Militia has not been required to participate in the formal integration plan established by FMC (Mobile Command, 1991). Given the experience of the Militia as a mixed-gender organization it is thought that the years of experience of this group can contribute to the understanding of the integration process.

For the most part, research about the Primary Reserves has focused on problems of attrition and the design of marketing campaigns to recruit. For future planning purposes there is also demographic research on the characteristics, attitudes and values of reservists (Goodfellow, 1976; Goldfarb, 1984).

A recent study within the Department of National Defence (Truscott, 1987) continued to probe the same subject areas and subsequently revealed a profile of the women who are in the Militia. According to Truscott (1987) the Primary Reserve is still the preserve of young, single males (80%).

Within the Reserves, women are congregated in administrative roles, a function of self-selection and restricted training and employment opportunities. In addition, women are three times more likely than males to accumulate the fewest of service related employment hours. Women and men have been identified as having different motivations for joining the Reserves. Women cite pragmatic/monetary reasons and view their employment as a part-time job while males identify reasons otherwise characterized as patriotic/interest motivators i.e. service to one's country or desire to learn military skills. Females are twice as likely as men to report that family and/or social obligations interfere with their ability to attend courses. While there has been a change in policy that allows women to enrol in an infinite variety of non-traditional occupations and roles, including the combat arms, as of 1986 women did not appear to be showing strong interest in pursuing such offers. Although women continue to be congregated in administrative/clerical duties, there are those who have entered hard combat occupations in the past two years. Further, given the Militia's past policy of deploying women to the field in support roles where they are often integrated with the Regular Force, women in the Militia have considerable experience in coping with the demands of non-traditional employment for women in the Military. In 1990 women represented 20% of the Militia strength, up from 11% in 1986. As indicated in the review of arguments against women

in combat, group cohesion is a major argument deterring integration. For a social psychologist of the workplace the Militia was thought to be a good example of an organization which facilitates the integration of women given the increases in the past five years.

The present study is based on Cook's model but as a result of the alterations by Royle, there is an expectation in this study that the four specific categories of variables will have effects on the Intermediate and Final Outcomes. Conceptually the predictor variables can be divided into two groups, (1) Situational-Personal, Situational-Setting and (2) Contextual-Social Environment and Contextual-Nonsocial Environment.

The Situational-Personal variables measure the woman's similarity to what is normally viewed as stereotypically female, namely:

a. the type of occupation in which she is employed;

b. the level of training for her job and her technical competency;

c. the woman's physical fitness level;

d. her experience and adeptness at working with men;

e. how the woman exhibits positive social traits on the job; and,

f. how the woman is similar to servicemen in the Militia in beliefs, education and social-economic status.

The Situational-Setting variables measure the woman's relative status and numerical representation by:

a. identifying the woman's rank and therefore, her relative status in the organization; and,

b. calculating the proportion of women to men in the woman's immediate working group and in her unit.

The Contextual-Social Environment variables measure the woman's perception of peer group norms and her views of persons with reward power, the group climate, the openness of the group to new members and the recognized support of supervisors by:

a. measuring the woman's attitudes of her peers, supervisors and those of command as she perceives them to be;

b. measuring the social and group climate; and,

c. measuring the woman's perception of the group's openness to newcomers and her supervisor's appreciation for her work.

The Contextual-Nonsocial Environment variables measure the working setting characteristics by:

a. measuring her longevity in the group;

b. measuring the woman's perception of the flexibility of the work structure; and,

c. measuring the woman's perception of the teamwork required to complete tasks.

Following Cook's model and his idea that change in behaviour and attitude occurs and needs to be assessed at different time intervals there are two levels and categories of outcome variables that measure integration, the Intermediate and Final Outcomes. The Intermediate Outcomes tap what has occurred during intergroup contact. These measures are influenced by the personal and situational

characteristics of the contact setting and ultimately are expected to influence Final Outcomes. This is not the same for the Final Outcomes which occur as a result of the contact situation.

Intermediate Outcomes, the first group of criterion variables, relate to interdependence and intimacy. These were measured by:

a. the demonstrated help the woman received;

b. the woman's centrality to the group's activities; and,

c. the woman's inclusion in non-work activities.

The focus of the Final Outcomes, the second group of criterion variables, relates to the expanded employment opportunities for women in the military and its influence on the attraction to and esteem for the person as an individual and the attraction to and esteem of women as a group or class. The attraction to the person and esteem of the woman was measured by:

a. the woman's self-report of the amount of verbal and physical harassment, on and off the job;

b. the woman's self-reported feelings of acceptance and satisfaction with her employment; and,

c. the woman's intentions towards military employment.

The attraction to the person and esteem of women as a group or class was measured by:

a. the woman's assessment of her own attitudes about servicewomen in the Militia; and,

b. the woman's assessment of the change in attitudes of the group member's about the servicewomen as a group.

Based on Royle's (1983) study of women in the Marines Figure 1 illustrates the model that will be applied to studying the variables that contribute to the integration of women serving in the Ottawa Militia District. As can be seen in the chart women who are similar to men in beliefs, work in settings with positive group climate and require teamwork to complete tasks should be included in non-work activities, feel accepted at their place of employment and not be harassed. In this study a similar pattern of relationships is expected. In another example, women who experience positive integration would be recognized as contradicting stereotypes by being technically competent in "men's work", possessing positive social traits, having similar beliefs to men, having comparable levels of education, having supportive group climates, and being able to structure work themselves.

In considering the Situational-Personal and Situational-Setting categories of predictor variables, outcomes will be more positive for women who:

a. differ from the stereotype of being unfit for non-traditional jobs;

b. exhibit positive social traits;

c. are similar to servicemen in the Militia in their beliefs, education and socio-economic status; and,

d. are in groups with a high proportion of women.

By measuring and including the Contextual-Social Environment and Contextual-Nonsocial Environment categories of predictor variables, outcomes will be more positive when:

a. male peers, supervisors and those in command appear to hold positive attitudes about the role of servicewomen in the Militia;

b. there is a favourable social and group climate;

c. the group is open to newcomers;

d. the woman's supervisor and the organization she works for appreciates her job performance;

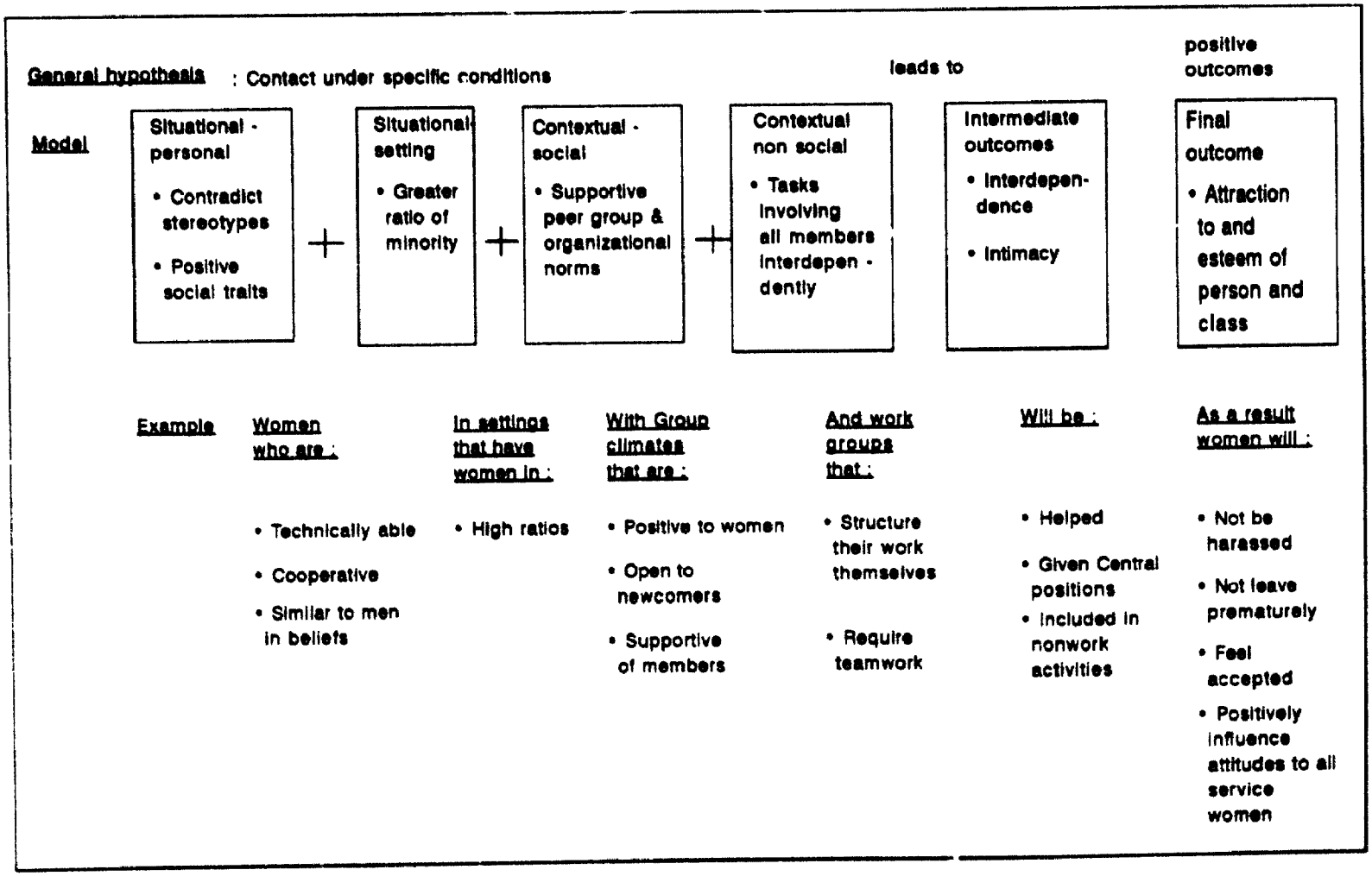
e. the woman has been part of the group for a lengthy period of time;

f. the group has flexibility in structuring the work; and,

g. teamwork is needed to complete the tasks.

Figure 1

Variables and relationships in the contact hypothesis as applied to the integration of women



Source: C.A. Strom, The Contact Hypothesis and Factors Affecting the Integration of Women in the Canadian Military (1992). Adapted from M.J. Royle (1984). Aid to Integration of Marine Corps Women, p. 95. In N.H. Loring (Ed) Women in the United States Armed Forces. Chicago: Inter University Seminar.

Method

Sample of Respondents

The participants were 102 servicewomen employed in the 12 Militia units of the Ottawa Militia District. Only those women currently employed in the Militia were contacted to complete the survey. The ranks of the participants ranged from Major to Private. The women surveyed are employed in 12 noncommissioned and four officer occupations. Further demographic information is provided in Appendix A.

The military occupations in which the women serve are not only descriptive of the work performed but can also be classified as traditional or non-traditional employment. Traditional military occupations are those to which women have been routinely allocated, and are categorized as clerical or service support. For the purposes of this study, non-traditional occupations are those of the combat arms, in which training has only been opened to women in the past three years.

Procedure

According to personnel records a total of 240 women were available for study. In the end a total of 135 surveys were distributed. The remaining potential respondents were unavailable for a variety of reasons. Of the 135 surveys distribution, 87 were handed directly to the women at their

place of employment in the Militia. The 48 potential participants from a service battalion were solicited for their participation by mail. In total, 102 surveys were completed, 87 directly from Units (100%) and 15 returned through the mail (33%). Participants at their work site were given an oral briefing about the purpose of the survey while those contacted through the mail were given a written briefing, (see Appendix B).

Measurement Instrument

The survey consisted of a 19-page, 170-item questionnaire modelled after Royle's (1984) research on women in the United States Marine Corps. A copy of the survey is provided in Appendix C. Prior to the study four members of the Militia in the Ottawa District reviewed the survey which resulted in the modification of several items in order to increase their clarity. For this study all information was self-reported by the women whereas in the Royle study demographic and personal performance assessments were extracted from Defence "Personal Files".

Survey Content

As already described, using Cook's model (1969) of the contact hypothesis, Royle (1984) developed a survey to measure the relevant variables in the contact hypothesis which might explain the factors affecting women's employment status in the United States Marine Corps. It is these items and scales from the survey that are being used to measure the factors affecting the employment status of women in the Militia in the Ottawa District. Additional items were created and included to provide relevant demographic information. Because time constraints did not allow individual interviews with the respondents, qualitative questions were included in the survey to capture more information. Appendix D accounts for all questions of the survey and indicates the variable represented by the question. The number of the question is indicated after each description below. Sets of questions are grouped in the same way as Royle grouped questions with additional items labelled.

Situational-Personal Characteristics

Similarity to Stereotype. All personnel in the Canadian military have a Military Occupation Code (MOC) which consists of a three digit code for Noncommissioned members and a two digit code for Officers (42). For the employment of women, occupations have been assigned Traditional or Non-traditional

employment status based on the employment experience of women in the Canadian military, i.e. historically women have been assigned to clerical and service support roles (Traditional occupations). Appendix E lists all the occupations represented by MOC found in this study. The classification of the MOC is identified as Traditional or Non-traditional. A second measure (47), is open-ended and asks women to briefly describe what kind of work they do in their military job. It is intended to determine if the woman is carrying out duties indicative of her job description and occupational training.

How a woman supported or refuted the negative stereotype of women as too weak and technically inept in doing "men's work" is measured by a woman's self-assessment of her technical ability (135) and the quantity and quality of training for the job, including prior civilian training and experience (49, 139). Her experiences with predominantly male groups, both socially and at work (2, 29, 140) were included to help predict ability to work in a male-dominated environment. Hours spent in physical activities before and during military employment (23, 24, 26, 27) were included as a measure of physical strength and capability. The Body Mass Index (BMI) is an indicator of one's general fitness level. The height and weight measures (7, 8) are used to calculate the Body Mass Index ($BMI=kg/m^2$).

<u>Positive Social Traits</u>. Grooming and a positive personal appearance is important to the military establishment and its

public relations. Attaining a specified level of physical fitness and maintaining a prescribed weight is part of the personnel evaluation system in the Canadian military. It is monitored to confirm the readiness of troops but is also in place to present a positive public image of personnel in uniform as representatives of their country. The women were asked to evaluate their personal appearance in comparison to others in the Militia of their rank and MOC (137). The ratio of one's height to weight (BMI) was also included as an additional measure of appearance (7,8).

The quality of cooperativeness was examined by asking the woman to assess her ability to get along with others (138). Her willingness to contribute to the group was assessed by the amount of effort she said she put into the job and by the amount of help she offered others (136, 96).

Similarity of Beliefs. Estimating whether a woman held "Traditional" or "Contemporary" beliefs is reflected in how she answered questions relating to how she perceived men's and women's roles in general, and in the military specifically. Women were asked about how they perceived men's and women's roles in a marriage (31), their marriage plans (34), how they combined career and family goals (35), how many children they desired (36) and whether they would volunteer for combat (124).

Experience working with men had already been introduced by items related to establishing the woman's physical strength

and fitness and her male group experience.

Socio-Economic Status and Education. Generally speaking, women in the civilian workforce tend to have higher levels of education in comparison to their male counterparts, primarily in the unskilled labour and white collar sectors (Census Canada, 1986). The same is true for those women employed in the Militia (Truscott, 1987). If similarity in background is important to being accepted then comparable socio-economic status and levels of education would assist women in being accepted. The survey included questions about the woman's social class (6) and her mother's and father's occupations (12, 15). While Royle was able to extract the woman's highest level of education from a master file, in this survey a question was developed to capture that information directly from the respondents (46).

Situational-Setting Characteristics

Relative Status. Although Royle found only a weak relationship between a woman's rank, her supervisory status and positive outcomes, only rank (43) was retained for its demographic information. Royle similarly reported no relationship between supervisor's sex (81) and a woman's acceptance but this item was retained given its link to the question related to "Supervisor's Attitudes".

Percentage of Minority. The question of relative proportion of the minority to the majority in groups has been

researched by Kanter (1977). Among others, research from civilian organizations indicates that groups with a higher percentage of women create a more positive employment experience for women. In the Royle study, however, the proportion of women in the groups did not affect integration. Further, being the only woman in a group did not seem to affect acceptance significantly. Although Royle did not find any relationship between the proportion of women in their immediate working group (50, 51) or the proportion of women in their unit (54, 55) and acceptance, the items were retained for analysis because of the propensity of literature indicating the contrary.

Contextual-Social Environment Characteristics

Peer Group Norms and Importance of Peers. To determine the prevalence of the acceptance of women in the group the woman was asked to assess the attitudes of the majority of men in the work group about having women in the unit (64).

Views of Persons with Reward Powers. To determine the prevalent norms of those in authority with reward power, questions were asked about the perceived attitudes of supervisors (82) and the command attitude (86).

Group Climate. Wishing to expand upon the "Social Factor" of Cook's contact hypothesis model, Royle included questions to measure the openness of the group to newcomers (57) and the group's organizational climate (65-78). Royle

adapted the scales developed by Moos (1975b) to measure group climate in Army training battalions and reduced the scale from 28 to 14 items for the Marine Corps survey. In addition, the scale was changed from a true/false format to a four-point continuum anchored by strong agreement or disagreement. The 14-item organizational climate scale retained for this study consists of seven subscales: Involvement (65, 69); Peer Cohesion (66, 67); Officer Support (68, 76); Personal Status (70, 73); Order and Organization (71, 72); Clarity (75, 77), and; Officer Control (74, 78). Table 3 offers the details of the subscales. As supported by the research of Woelfel and Schreiber (1979) the organizational climate measure was further extended to include women's perceptions of whether their supervisors appreciated the work they did (79) and if there is recognition that the work done by the group is important to the organization (80).

Contextual-Nonsocial Environment Characteristics

Physical Proximity, Acquaintance Potential and Interdependence Requirements. Royle was particularly interested in developing items that would tap information about the non-social characteristics related to the work group that would facilitate integration. Royle developed and refined questions that would tap the extent of contact. Questions about the length of time the woman had been a part of the group (48), the flexibility to structure the work (56) and the inter-

Table 3

Military Company Environment Inventory (Moos 1975b)

		Relationship Dimensions
1.	Involvement	How actively junior personnel participate and take interest in the functions of their unit.
2.	Peer Cohesion	Measures the social and personal relationships that develop among personnel and their tendency to stick together and help each other.
3.	Officer Support	The degree of friendship and communication between Senior Non Commissioned Officers and officers and the junior members, and how much Non Commissioned Officers and officers try to help and encourage junior personnel.
		Personal Growth Dimensions
4.	Personal Status	The extent that individual differences are recognized and respected, and the emphasis on junior personnel assuming responsibility for running the unit.
		System Maintenance Dimensions
5.	Order and Organization	The emphasis on organization and following schedule and the concern with physical neatness of the work area.
6.	Clarity	How clearly the regulations and line of authority of the unit are understood by personnel, and the extent to which they know what is expected of them and the consequence of not meeting these expectations.
7.	Officer Control	The extent to which supervisors, including officers, use commands, close supervision, ridicule, rewards and punishment (threatened or real) to keep enlisted members under control.

Source: R.H. Moos (1975) Evaluating Correctional and Community Settings, p.20. New York: Wiley.

dependence or teamwork required to do the job (59) were included because Royle had reported a relationship between these variables and the acceptance of women. Items related to group size, staffing level and interchangeability were not included after considering that Royle's results indicated no relationship between these items and positive outcomes.

Person and Person-Contextual Characteristics

Although Cook's model of integration proposed that the prejudices of existing groups members be evaluated Royle did not consider it feasible and therefore no personal variables were included in the research. Similarly, measures of personal variables were not considered feasible for the current research.

Outcomes***Intermediate

According to the Cook model, behaviours and actions demonstrated during the contact situation (Intermediate Outcomes) would ultimately result in changes in attitudes towards the individual and the class that the individual represents (Final Outcomes).

Interdependence. From Cook's model, questions about how much the woman was helped by the group (101, 102, 103) and her centrality to the group (92, 93, 96, 100, 104) were included.

Intimacy. Questions reflecting the group's willingness to include the woman in non-work contact (94, 95) were also included.

Outcomes***Final

Attraction to the Person and Esteem of Person. The attraction and esteem towards the woman herself was measured from three perspectives. First, the group's positive or negative treatment of her was measured by the amount and type of harassment she experienced (126, 127, 128, 129, 130, 92). Second, her feelings of acceptance were measured by her self-reported levels of satisfaction with the co-workers and supervisor (61, 62, 143). Finally, attrition was measured by questions about her intentions towards leaving or continuing with Militia employment (144, 146, 148).

Attraction to Class and Esteem of Class. In the Royle study the measures related to the increased attraction and esteem of women as a class were initially obtained from the woman's supervisor. In the current research the impact of women's expanded employment in the Militia was examined from the woman's evaluation of her own attitudes toward women in the Militia (169) and how she perceived the groups attitude towards women as a class (168).

Results

Data Reduction and Analysis

The data were coded for 102 respondents according to the coding scheme outlined in Appendix F. The data set consisted of 170 questions, many of which were not included in the final analysis. Because of the use of multiple predictor and outcome measures the data were examined and reduced accordingly to control for type I error (Pedhazur 1982, Bryman & Cramer, 1990).

First, based on frequency distributions, items were eliminated when no variability was found, when missing data were substantial and/or when redundant information was being provided. In addition, qualitative items were deemed unsuitable for future correlation and regression analysis because the responses were not analyzable on continuous or categorical scales.

In identifying the predictor variables that would contribute unique information to account for the variability in the outcomes, intercorrelation measures among predictor variables were computed. From these results, and given the difficulties using regression analysis with a small ratio of predictor variables to respondents, factor analysis was used and composite measures generated. All decisions were taken with the model provided by Royle in mind. The items in the reduced data set are detailed in Table 4.

Table 4

Summary of Items in the Analysis

SITUATIONAL-PERSONAL CHARACTERISTICS	
Similarity to Stereotype	
Traditional or non-traditional	42
Technical skills	135
Physical strength	23
Job skills	139
Male group experience	2, 29, 140
Positive Social Traits	
Appearance	7, 8, 137
Cooperativeness	136, 138
Similarity of Beliefs	
Attitude toward women's role	31, 34, 35, 36, 124
Experience working with men	same as "male group experience"
Socio-economic Status and Education	
Socio-economic status	6
Education	46

SITUATIONAL-SETTING CHARACTERISTICS	
Relative Status	
Rank	43
Supervisory status	--
Sex of Supervisor	81
Percentage of Minority	
Proportion of women	--

CONTEXTUAL-SOCIAL ENVIRONMENT CHARACTERISTICS	
Peer Group Norms and Importance of Peers	
Group attitudes about women in the Militia	64
Views of Persons with Reward Powers	
Supervisor's Attitudes	82
Command Attitudes	86
Women in chain of command	--
Group Climate	
Moos (1975b) Military Environment Inventory (modified)	65-78, 79, 80
Openness	57
Supervisor appreciates work done	79
Organization recognizes importance of group work	80

CONTEXTUAL-NONSOCIAL ENVIRONMENT CHARACTERISTICS	
Physical Proximity, Acquaintance Potential, and Interdependence Requirements	
Longevity in the group	48
Group Size	--
Staffing Level	--
Interchangeability	--
Flexibility to structure work	56
Teamwork required	59

OUTCOMES***INTERMEDIATE	
Interdependence	
Demonstrated helping	92-104 - When First Arrived
Woman's centrality to group	92-104 - Now
Intimacy	
Non-work contact	

OUTCOMES***FINAL	
Attraction to Person and Esteem of Person	
Harassment	126, 127, 128, 129, 130
Woman's feelings of acceptance	61, 62
Attrition	144,146,148
Attraction to Class and Esteem of Class	
Attitude change toward women in the Militia	168,169

Source: Adapted from M.J. Royle (1983). Factors Affecting the Integration of Women into Marine Crops Units. Claremont Calif: Unpublished manuscript.

Predictor Variables as Composite Scores

In the interests of data reduction, composite scores were created from several predictor variables. Having considered Royle's model, two groups of items in the Situational-Personal category of variable were analyzed.

In the first group, Items 135-140, which included the woman's technical training and performance and her positive social traits, such as her personal appearance and ability to get along with others, were self-assessed on seven-point

scales. Because the six social traits were correlated sufficiently within raters (see Table 5), composite ratings were developed by calculating the woman's mean self-ratings. The reliability for the "mean self-rated" performance by the person using Cronbach's alpha reliability estimates was .65.

Table 5

Intercorrelation of Items Measuring the Women's Self-rated Job Performance

Item		135	136	137	138	139	140
Technical ability	135		.34**	.23	-.02	.46**	.11
Effort	136			.48**	.27*	.31**	.34**
Personal appearance	137				.35**	.27*	.48**
Ability to get along with others	138					.12	.53**
Training for the job	139						.28*
Ability to work with men	140						

p * < .01
p ** < .001

Again, based on Royle's model, a second group of items that addressed the woman's beliefs about traditional roles for women were analyzed as a potential composite measure. Items relating to marriage plans (34), desired number of children (36), beliefs about husband/wife shared domestic and financial responsibilities (31), balancing husband/wife domestic and

financial responsibilities (35) and volunteering for combat (124) were intercorrelated. The intercorrelations were modest and the mean rating across the five items was used as the composite measure "Traditionality" (see Table 6). The reliability measure using Cronbach's alpha was .55. The modest intercorrelations and low reliability could be related to the wording of the questions and changing beliefs in society over the past ten years about the compatibility of women with families and participation in the labour force.

Table 6

Intercorrelation of Items Measuring the Women's Self-Reported Beliefs about Traditional Roles

Item		31	34	35	36	124
Beliefs about male/female roles	31		.43**	.29*	.03	.07
Marriage plans	34			.13	.13	-.17
Balancing career and domestic responsibilities	35				.41**	.16
Desired number of children	36					-.09
Volunteering for combat	124					

p * < .01
p ** < .001

For the purposes of the Regression Analysis the proportion of

women in their immediate work group (50, 51), as well as the proportion of women in the unit (54, 55) were not included because of insufficient data after pairwise deletion.

Intermediate Outcome Measures Derived from Factor Analyses

As described earlier, respondents were asked to answer questions about occurrences that may happen among members of a work group. These particular series of questions have been identified as constituting the Intermediate Outcome category of variables and "interdependence" and "intimacy" are the criterion variables identified as being affected by intergroup contact. This series of 13 items (92-104) using a 5-point scale was designed such that respondents provided an answer based on two time periods: (1) when the woman "First Arrived" at the unit and, (2) "Now" - the time when the survey was completed.

The intercorrelation of items 92-104 for the time periods for "First Arrived" and "Now" indicated that within each time period items were significantly correlated ($p<.001$) and clustered to justify factor analysis (see Table 7 and Table 8). For the two data sets, principal-components analysis using varimax rotation resulted in three factors with eigenvalues greater than 1.00 for the two time periods. The variance accounted for was 61% for "First Arrived" and 56% for "Now".

Table 7

Intercorrelation of Intermediate Outcomes "First Arrived"

Item		92	93	94	95	96	97	98	99	100	101	102	103	104
Others give you a rough time (not just kidding)	92		-.30*	-.26*	-.17	.04	-.02	.13	.15	-.08	-.18	.53**	.47**	-.21
Others include you in job-related conversations	93			.70**	.53	.40**	.04	.14	.16	.25*	.39*	-.37**	-.30*	.43**
Others include you in non-job related conversations	94				.58**	.48**	-.07	.07	.10	.28*	.25*	-.35**	-.25*	.50**
Others include you in things they do together after work	95					.35**	.06	.05	.04	.36**	.23	-.18	-.05	.39**
You offer to help others	96						-.04	.14	.18	.36**	.14	-.10	-.05	.28*
You need help	97							.58**	.35**	.03	.26*	-.05	.01	-.25*
You ask coworkers for help	98								.62**	.06	.41**	.01	.05	-.14
You ask superiors for help	99									.18	.17	.02	.08	.00
Others ask you for help	100										.10	.02	.11	.47**
Others offer to help you without asking	101											-.22	-.19	-.01
Coworkers refuse to help you	102												.71**	-.22
Supervisors refuse to help you	103													-.22
Supervisors give you important jobs	104													

p * < .01
p **< .001

Table 8

Intercorrelation of Intermediate Outcomes "Now"

Item		92	93	94	95	96	97	98	99	100	101	102	103	104
Others give you a rough time (not just kidding)	92		-.11	-.18	-.16	-.01	.02	-.19	-.02	-.13	-.23	.34**	.29**	-.06
Others include you in job-related conversations	93			.60**	.50**	.24	.32**	.35**	.27*	.38**	.38*	-.16	-.09	.38**
Others include you in non-job related conversations	94				.65**	.24	.30*	.28*	.12	.40*	.22	-.18	-.14	39**
Others include you in things they do together after work	95					.20	.26*	.32*	.20	.20	.17	-.18	-.12	.18
You offer to help others	96						.18	.18	.17	.25*	.04	-.05	-.11	.12
You need help	97							.56**	.56**	.39**	.10*	-.29*	.23	.10
You ask coworkers for help	98								.61**	.36**	.37**	.03	-.01	.14
You ask superiors for help	99									.25*	.16	.22	.09	.10
Others ask you for help	100										.15	.18	.14	.43**
Others offer to help you without asking	101											-.10	.05	.00
Coworkers refuse to help you	102												.75**	.03
Supervisors refuse to help you	103													-.06
Supervisors give you important jobs	104													

p* < .01
p** < .001

Table 9 provides the factor loading and the respective Cronbach's alpha reliability measures for each factor for the two defined time periods. The factors were labelled appropriately for "First Arrived":

a. Factor 1 - "Included On and Off the Job" (Items 93, 94, 95, 96, 100, 104);

b. Factor 2 - "Excluded" (Items 92, 102, 103); and,

c. Factor 3 - "Accepted and Helped" - (Items 97, 98, 99, 101).

Factors were grouped similarly for "NOW", except that Factor 2 and 3 were reversed in terms of their factor loading.

In the regression, factor scores were used; namely the mean of the items in the factor loading.

Final Outcome Measures as Combined Scores

The Final Outcomes category of variables, Attraction to Person and the Esteem of Person, were measured by the three criterion variables: (1) the harassment the woman received; (2) her feelings of satisfaction with the job; and, (3) her intentions to leave military employment, otherwise identified as "attrition".

Table 9

Factor Structure of a Factor Analysis of Women's Intermediate Outcome Items

Item	Women : First Arrived			Women : Now		
	Factor 1 Included on and off job	Factor 2 Excluded	Factor 3 Accepted and helped	Factor 1 Included on and off job	Factor 2 Accepted and helped	Factor 3 Excluded
92. Others give you a rough time (not just kidding)	--	.74	--	--	--	.57
93. Others include you in job-related conversations	.69	--	--	.70	--	--
94. Others include you in non-job related conversations	.77	--	--	.81	--	--
95. Others include you in things they do together after work	.72	--	--	.61	--	--
96. You offer to help others	.70	--	--	.40	--	--
97. You need help	--	--	.77	--	.68	--
98. You ask co-workers for help	--	--	.90	--	.84	--
99. You ask superiors for help	--	--	.71	--	.78	--
100. Others ask you for help	.67	--	--	.63	--	--
101. Others offer to help you without asking	--	--	.55	--	.51	--
102. Co-workers refuse to help you	--	.85	--	--	--	.89
103. Supervisors refuse to help you	--	.85	--	--	--	.80
104. Supervisors give you important jobs	.71	--	--	.72	--	--
	N = 97	N = 99	N = 100	N = 93	N = 96	N = 95
Cronbach's Alpha	.82	.72	.69	.75	.69	.63

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

For harassment the zero-order correlation of items 126-130 indicated that these items were highly correlated (p<001) (see Table 10). The intercorrelations suggested that women identified verbal and physical harassment but that neither was more prevalent on or off the job. As a result, the mean of items 126 and 128 and the mean of items 127 and 129 were computed as measures of "Verbal Harassment - On and Off the Job" and "Physical Harassment - On and Off the Job", respectively.

Table 10

Intercorrelation of Items Measuring Women's Self-Reported Incidents of Verbal and Physical Harassment

Item		126	127	128	129	130
On the job - how often experienced unwanted touching	126		.42**	.63**	.31**	-.19
On the job - how often experienced repeated sexual jokes and comments	127			.31*	.60**	-.11
Outside your unit - how often experienced unwanted touching	128				.43**	-.05
Outside your unit - how often experienced repeated sexual jokes and comments	129					-.07
How often the women experience benefits for sex	130					

p * < .01
p ** < .001

In analyzing the woman's feelings of acceptance and satisfaction with employment, items 60-63, measured on a five-

point Likert scale were intercorrelated. The results of the zero-order correlation indicated that only satisfaction with co-workers (61) and satisfaction with supervisor (62) were significant and highly correlated (p<001) (see Table [illegible]). The composite measure of acceptance and satisfaction is the mean of these two items.

Table 11

Intercorrelation of Items Measuring Women's Self-Reported Feelings of Acceptance and Satisfaction

Item		60	61	62	63
Satisfaction with the present job	60		.33**	.43**	.19
Satisfaction with co-workers	61			.65**	.31**
Satisfaction with supervisor	62				.25*
Satisfaction with militia employment in general	63				

p * < .01
p ** < .001

For the purposes of the regression analysis, all other items in the survey were retained individually. Multiple regression analysis was used to determine the variables which most strongly affected the outcomes. Stepwise multiple regression was chosen because it provided the most stringent evaluation of variables based on their theoretical criterion for inclusion in the regression equation. Pairwise deletion

was used as the missing-value treatment. Table 12 presents all significant effects for the regression analysis. Using a conservative approach in interpreting the results of the regression analysis, only those equations with significance levels of $p<.01$ and $p<.001$ will be discussed. In addition, results are discussed using a cut-off of 20% of variance accounted for. There are three Intermediate Outcome measures and one Final Outcome that meet the cut-off criterion for inclusion in the results. With respect to the impact of the Situational-Personal and Situational-Setting variables, there are no strong effects of these variables with the exclusion of social class which is described later. Most of the effects in this study are with respect to Contextual-Social and Contextual-Nonsocial Environments.

In the woman's recollection of her initial employment experience at the unit ("First Arrived"), perceptions of negative attitudes of the men in her work group and the less rule defined leadership type of the officer in charge best predicted that the woman would be excluded by the group. These two variables accounted for 25% of the variance, $F(2,77)=12.50$, $p<.001$.

However, in considering the woman's current employment situation (identified as "Now") the women identified several important variables. Women perceived that supervising officers who were less rule defined in their approach to leadership and negative peer cohesion contributed to their

exclusion by the group. To a lesser extent, the negative attitudes of the men in the women's immediate working group plus the women's self-assessed lower social class best predicted that the woman would be excluded from the group on and off the job. The first two variables in the equation are subscales of the Moos Military Environment Inventory and account for 40% of the variance while the men's negative attitudes and the woman's self-assessed low social class accounted for 4% and 3% of the variance respectively. These four variables accounted for 47% of the variance, $F(4,75)=16.08$, $p<.001$.

For the woman's current employment situation ("Now"), how much the woman perceived that her supervisor appreciated her work and the perceived requirement for teamwork to complete taskings best predicted that the woman would be included by the group both on and off the job. These two variables accounted 28% of the variance, $F(2,77) = 14.91$, $p<.001$.

The woman's perception of the appreciation her supervisor has for the work she does accounted for 20% of the variance in the amount of comfort and satisfaction the woman has with her employment. From the Moos subscales, Order and Organization, the emphasis the organization has for following a daily schedule and the concern for physical neatness contributed 5% of the variance in the woman self-assessed positive satisfaction with her job. Combined, the two variables accounted for 25% of the variance, $F(2,77)=12.32$, $p<.001$.

Table 12

Summary of Stepwise Multiple Regression Analysis to Predict Outcome Variables Using Characteristics Rated by the Woman

OUTCOME	VARIABLE	r	BETA WEIGHT	R^2_{ch}	R^2_{Total}
First Arrived-Included on and off the job	Personal Status	.35***	.32**	.12***	
	Supervisor's attitude	.29**	.26*	.07**	.19***
First Arrived-Excluded	Men's attitude	-.40***	-.31**	.16***	
	Officer Control	.40***	.31**	.09**	.25***
First Arrived-Accepted and helped	Personal Status	.25**	.25*		.06*
Now-Included on and off the job	Supervisor appreciates work done	.48***	.46***	.23***	
	Teamwork	.26**	.23*	.05*	.28***
Now-Accepted and helped	Involvement	.28**	.26*	.08*	
	Personal Status	.27**	.24*	.05*	.13**
	Supervisor's attitude	-.16**	-.22*	.05*	.18**
Now-Excluded	Officer Control	.50***	.42***	.25***	
	Peer Cohesion	-.44***	-.33***	.15***	.40***
	Men's attitudes	-.42***	-.21*	.04*	.44***
	Social Class	-.10*	-.18*	.03*	.47***
Verbal Harassment	Order & organization	-.25**	-.25*		.06*
Physical Harassment	Officer Control	.39***	.39***		.15***
Benefits for sex	Personal Status	-.23*	-.23*		.05*
Satisfaction	Supervisor appreciates work done	.44***	.40***	.20***	
	Order & Organization	.29**	.22*	.05*	.25***
Attrition: -Comfort -Intentions to leave -Future Plans	No variables entered				
Esteem of woman	Officer Control	.24**	.24*		.06*
Esteem for class	Officer Control	-.29**	-.29*		.08*

p* <.05
p** <.01
p*** <.001

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

Discussion

While there was a potential to gather information from 250 servicewomen employed in the Militia in the Ottawa District only 103 completed the surveys. Because of the imbalance of the distribution of the women across all the military occupations available in the Militia it was not possible for the data to be broken down into groups of traditional and non-traditional occupations. After taking into account missing data the number of available completed questionnaires utilized in the analysis fluctuated from a high of 102 to a low of 90 cases. Similarly, with the multiple regression analysis, after accounting for missing data using pairwise deletion, 79 cases were considered for the analysis. Given the small N in comparison to the predictor and criterion variables used in the analysis, the results should be viewed with caution.

Despite weaknesses in the study, there is no reason to believe that the results do not offer insight into the employment situations and experience of servicewomen in the Canadian Military. Although it can be argued that the results are perhaps influenced unduly by differences in the management of personnel by individual units, the women's youth and over representation in the junior ranks, there is still credence in their observations on the behaviour of their peers and the organization for which they work.

Generally speaking, all women who are employed in the military are employed in non-traditional employment. However, a closer evaluation of the situation indicates that for many years, as in the private sector, women are expected to fill specific occupations in the military. In this study 80% of the participants were from the administrative and clerical group. To gain a better distribution of responses there is a need for more representation of women serving in the diverse service support occupations, also identified as traditional employment for military women. As women increase in numbers in the combat arms, classified as non-traditional employment, there would be opportunity to compare responses.

The results of the study showed that variables that measured the 'contextual' aspects of the contact hypothesis contributed the most in accounting for the variance in the outcomes. The only exception was the contribution of a woman's social class which accounted for only 3% of the variance in predicting her exclusion from the group in her current employment.

The elements of the contact hypothesis first proposed by Amir (1969) and later modified by Cook's (1969) model, states that specific characteristics of the person involved and the dynamics of the contact situation, in this case one's work environment and non-work contacts, combine to establish the conditions under which conflict is reduced between groups. In this study the contextual variables that measured Group or

Social Climate (Moos 1975b), the attitudes of male peers towards women's employment in the military, the requirement to complete tasks using teamwork and supervisor's appreciation of the work done by the woman accounted for variance in all outcomes. Those variables measuring personal characteristics did not make a significant contribution in accounting for the variance in either the Intermediate or Final Outcomes in the regression analysis. Attrition, as measured by questions that captured information on the woman's intentions towards continued military service, was not predicted by the variables.

These results provide mixed support for past research where both personal and contact characteristics contributed to findings on the applicability of the contact hypothesis to the integration of women into non-traditional employment situations (Royle, 1983; Guns, 1985).

While it can be summarized that the contact hypothesis offers a balance of preferred characteristics of both the minority individual and the characteristics of the contact situation, the results of this study clearly point to the greater importance of the characteristics of the organization. In fact, it is climate issues which have been used more recently to exclude women after the physiological and psychological have been abandoned.

Particularly important is the social climate scale which is the perception of the respondent of her social environment.

Such is the case of the Moos subscales; Peer Cohesion, Order and Organization, and Officer Control. It is these three measures that are highlighted in the results and perhaps point to a new direction in understanding and facilitating the integration of minorities. For many years the focus has been on studying 'the woman' and the qualities or lack of qualities that she had to bring to the workplace in order to be accepted. Now the focus is shifted to the dynamics of the organization and group in which women are employed. In the forefront of this particular study, it is the positively perceived dimensions of the organization and those who hold leadership positions and power in the organization that best predict positive outcomes. In addition, the attitudes of male co-workers also contributed to how a woman perceived her acceptance in the unit. Given that the military is a highly structured hierarchical organization where rules about organization and order are viewed to be essential to effective operation, it is not surprising that such factors become salient in reviewing women's perceptions of acceptance and integration. This information also leads to the suggestion that it is the organization that has the power through its policy and practices to guide and facilitate integrated employment of all military members.

Considering the Case of the Low R^2

Of the 15 criterion variables measured only 4 were deemed

to have met the criterion measure for inclusion as results to be discussed. In reviewing the results of the analysis a number of points are raised to help explain the poor variance accounted for by the remaining 11 criterion variables. For the Intermediate Outcomes, "First Arrived" the woman was asked for retrospective information and then within the same question for comments on her employment situation "Now". A lack of accurate recall could explain the poor analysis of variance for these outcomes.

While the results of the regression analysis provided particular insight into how women perceived their work environment and its respective personnel, an analysis of the qualitative questions provided additional information. Quantitative results indicate that the emphasis has been shifted from the personal to the dynamics of the organization. Yet the responses to the qualitative questions on the same subject indicated that it was the woman's personal attributes that were most important. For example, respondents frequently cited the need for women to display a high level of competence in their jobs and to be positive and accepting of group attitudes in order for them to be accepted by the group. In the quantitative questions about harassment women reported relatively few incidents of physical and verbal harassment or problems in dealing with crude language in the workplace. Yet in answering the qualitative, open-ended questions on the same subject, the majority reported "dealing with harassment and

negative attitudes" as the worst thing about being a woman in the Militia. The difficulties in dealing with personal hygiene and sanitation in the field was the second most cited complaint about being a woman in the Militia. In addition, very few women commented in the qualitative questions about the efforts the Militia has displayed in encouraging women to stay. Of the 38 who voiced an opinion, 20 stated that nothing should be done and that men and women should be treated equally.

Questions that address sexual, physical and verbal harassment were worded deliberately in a direct manner so there is no doubt about the clarity of the question. In this case, and given the responses to qualitative questions for the variable, there is doubt as to whether the women recognize and acknowledge that physical and verbal harassment is part of their work environment. It is difficult to assess at this point, but it could be suggested from the results that women are: (1) ignorant of what constitutes such behaviour, or (2) recognize it but choose to ignore such behaviour or refuse to comment on it for fear of retribution. These results are speculative, but given the recent personal testimony, publicity in the media, and the publicized cases adjudicated by the Human Rights Commission on sexual harassment in the workplace it is more than likely that harassment exits but that women are reluctant, if not fearful, to report incidents.

Attrition as measured by the woman's reported comfort in

living and working in a male dominated environment and her intentions to leave military employment were not predicted by any of the variables studied. The same was true of Royle's (1983) research. In this case, the variable was probably confounded by the fact that the question was addressed to those women currently employed in the military and measured one's intentions to stay or leave not her actual leaving. The issue of measuring intentions and linking them to action is problematic.

Measuring the Final Outcomes, Attraction to the Person and the Esteem of the Person and Attraction to Class and the Esteem of Class also rendered poor results. Based on the qualitative responses to these questions (169, 168) it would appear that the women had not thought much about the changing roles of women in the Militia and their own attitudes towards these women and therefore did not have an opinion on the subject. Understanding group consciousness may not be an easy concept to grasp at the best of times nor necessary for women's entrance and remaining in the military. It could be a case where the level of maturity and the average age of 26 years has had a significant effect on the results.

The Impact of Research

An unintended finding of this study was that there were a number of respondents who expressed reluctance about the study's value or the effects they would suffer by being

singled out as a member of a minority group. Concern was expressed about the ramifications of evaluating servicemen's attitudes and behaviours, even though responses were strictly confidential this appeared to concern many. In particular, women felt that participating in the survey during working hours and being removed from their group for the hour to complete the questionnaire would result in needless personal hardship; for example, unwanted attention and questioning by peers. Many felt that it was perhaps time to turn the tables and ask the men about their gender integrated work environment and then compare results. Clearly these women, and in particular those who had just joined the combat arms, were not appreciative of their newly acquired celebrity status. They felt they were coping with the challenges reasonably well and that outside scrutiny added undue pressure to an already controversial situation.

Recommendations for Future Research

Future research should first refine questions in this study which were difficult to understand and answer. The questionnaire required a minimum of one hour to complete. Many found this tedious and tiresome which could, in part, explain missing data. Questions referring to sexual, physical and verbal harassment should be constructed so as to also probe the woman's level of understanding of the action. The issue of attrition might better be handled by contacting the

women who have actually left the Militia and conducting interviews as a follow-up for more comprehensive information.

The results of this study, as in the SWINTER trials indicated that the viewpoints, attitudes and behaviours of male peers in the military has a direct effect on the positive integration of servicewomen in their units. Given this information, it would appear that the time may be at hand to include men's viewpoints and observations on comparable contact issues addressed in the current study.

In this study, measuring the organizational climate of servicewomen's place of employment has contributed greatly to information about the integration of a minority group, women. This information, however, is considered only a preliminary finding. Future research should concentrate on establishing a better understanding of the organizational strategies for creating a positive climate.

There are many methods of gathering information for analysis. An alternative for future data gathering on the subject would be the use of personal interviews or focus groups. Since data gathering on this subject is necessary, care needs to be taken to properly inform those involved and to prepare both servicemen and women for this inevitability. While it might be some men and women's option that such research only draws on the negative, the more than twenty years of research on the subject of women in military employment clearly points to the contrary. As Royle (1987)

aptly points out:

> "Those who want to integrate women need to be reminded that the war is not over when the first battle is won, to return to a military image, and that initial success in integrating women must be followed by monitoring their progress in all aspects of the institution." (p. 348).

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Summary Table of the Demographics of the Militia Servicewomen in the Ottawa District who Participated in the Survey

N=102

	Mean	Mode	Range
Age	26 years	23 years	17-41 years
Duration of Service	4 years	2 years	.5-17 years
Rank	---	Private	(see below)
Education	---	Some University	(see below)
Social Class	---	Middle Class	(see below)
Rank	---	15% Officers	(1 Major, 8 Captains, 5 Lieutenants)
		21% Sr. *NCMs	(17 Sergeants, 2 Warrants Officer, 1 Master Warrant Officer)
		64% Jr. *NCMs	(26 Corporals, 40 Privates)

Education	Some High School	13%
	Completed High School	20%
	Some Community College or University	50%
	Post Undergraduate University Training	17%
Social Class (self-labelled)	Working Class	19%
	Lower Middle Class	7%
	Middle Class	55%
	Upper Middle Class	20%
	Upper Class	0

* NCM is the abbreviation for "Noncommissioned Members"

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

Briefing Letter

1. At this time I am requesting your participation in a research project that asks questions about women's work experiences as members of the Militia. All women within the Ottawa District who are currently employed in the Militia are being contacted for their contribution.

2. All information from the completed surveys will contribute to the completion of my Master's Degree thesis at Carleton University. Comments are for my eyes only. The intent is to gather information about women's work experiences in a non-traditional work environment. Individuals or units will not be identified or singled out when interpreting the information.

3. If you are willing to help me with this project please keep in mind the following remarks:

   (1) Read the directions carefully and answer the questions either by filling in the blank, circling the most accurate response or checking off a response. **It is essential that all fill-in-the-blank and multiple choice questions be completed.**

   (2) It is understood that some women may be have full-time Class C or Class B employment outside 28 Svc Bn. This questionnaire should reflect ONLY 28 Svc Bn employment experiences.

   (3) In the survey, the term "immediate working group" refers to those personnel that you work most closely with to complete taskings. The term does not imply a specific number of personnel.

4. If you have any questions about the survey either put your comments in the margins or in the space provided at the end of the questionnaire or I can be contacted at 824-8618.

5. The information is required by March 15, 1992. <u>If you choose not to participate</u> I would still appreciate hearing from you. Just put your comments at the end of the unused survey or telephone me at the above mentioned number.

6. To return simply place the survey in the stamped, self-addressed envelope provided, seal it shut and drop it in the nearest mailbox. No postage required.

7. Thank you for your participation.

Caralynn A. Strom
Captain
Personnel Selection Officer

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

Survey of Servicewomen Employed in the Militia in the Ottawa District

11 Feb 92

This Questionnaire is part of a study designed to help us understand the problems faced by the Canadian Armed Forces as they try to integrate women into traditional male occupations and roles. The questions you are about to answer will ask about your personal characteristics and about your personal experiences at work in the Militia. There are no right or wrong answers so be as honest as you can when you answer the questions. Please CIRCLE the number that comes closest to your answer, unless instructed otherwise. The survey is in two parts and should take about 45 minutes to complete. After reading the Privacy Act Statement, please complete the survey immediately and return it in the enclosed envelope.

Privacy Act Statement

All data from this study will be treated in the strictest confidence, your individual responses will not be made available to any other person or agency. Your responses will be converted into group information and will provide only summary findings to CF agencies on request.

Your voluntary cooperation in this project is essential for its success and is greatly appreciated.

PART I--BACKGROUND INFORMATION ABOUT YOURSELF AND FAMILY

1. What is your Year of Birth? (print year using numbers) (Example: If you were born in 1965, you would enter 65.)

   19___
   Year

2. How many brothers do you have?_____

3. How many brothers have military experience?____Yes ____No

4. How many sisters do you have?_____

5. How many sisters have military experience?_____Yes ____No

6. What would best describe the social class of your family when you were growing up?

   1. Working-class
   2. Lower-middle-class
   3. Middle-class
   4. Upper-middle-class
   5. Upper-class

7. What is your height?_____ft._____ins. or _____cm.

8. Your weight?_____lbs. or _____kgs.

9. Where were you born? 9.A. Canada_____
   (Province)

10. Other?_____
    (Country)

11. If not born in Canada at what age did you come to Canada?_____

\ What were the usual occupations of the adults <u>you lived with</u> when you were growing up?

12. Mother/female guardian_____

13. If housewife, what paid work did she do before marriage?

_____

14. During marriage, describe her paid employment, if any.

_____

15. Father/male guardian_____

16. Were either of your parents/or guardians <u>ever</u> in the Canadian Armed Forces or some other country's forces? CHECK the correct responses for each parent.

17. a. Father_____Yes _____No

18. Regular_____ Reserves_____ 18.a. Canadian____
Other_____

19. Land_____ Sea_____ Air

---

20. a. Mother_____Yes _____No

21. Regular_____ Reserves_____ 21a Canadian __
Other_____

22. Land_____ Sea_____ Air_____

23. How many hours per week do you spend in sports or active physical exercise? _____

24. Please list the kinds of activities and approximate number of hours for each.

Activity	25. Hours per week

26. How many hours per week did you spend in sports or physical exercise during the six months before you joined the Reserves?_____

27. What were the activities and number of hours for each?

Activity	28. Hours per week

29. CIRCLE the number on the scale below that best describes how much time you spent out of school hours in groups that were mostly male when you were growing up. CIRCLE the best response on the scale below.

None at all 1 2 3 4 5 Most of the time

30. What kinds of activities were these?

31. The contemporary view of male/female roles involves husbands and wives sharing domestic and financial responsibilities. In contrast, the traditional view assigns primary responsibility for the home and children to the woman while the man provides the financial support. Please CIRCLE your response for the question with these definitions in mind.

    I consider myself to be:

    a. A very contemporary (nontraditional) person.

    b. A fairly contemporary (nontraditional) person.

    c. About equally contemporary and traditional.

    d. A somewhat traditional person.

    e. A very traditional person.

32. Choosing from the responses to Question 31, which of them would best describe your mother?

    Number_____

33. Which of them would best describe your father?

    Number_____

34. One important issue facing women today is how to balance the demands of having both a career and a family. CIRCLE the response that best describes your plans for marriage?

    a. I have never been married, am not living with someone and plan to remain single.

    b. I have never been married but plan to marry some day.

    c. I am married.

    d. I am divorced, separated or widowed and plan to remain single.

    e. I am divorced, separated or widowed but plan to remarry some day.

    f. I am living with someone to whom I am not married.

35. How do you maintain balance in your life at this time? CIRCLE the best response for your situation.

    a. My career in the military is more important, and I don't want children.

    b. My career in the military is more important, but having children is important too.

    c. Career in the military and children are equally important.

    d. Children are more important than a career in the military, but I want both.

    e. Children are most important, even if it means having no other career.

36. How many children would you like to have (when your family is complete)? CIRCLE the best response.

a. No children
b. One child
c. 2 children
d. 3 children
e. 4 children
f. 5 or more

37. <u>Why</u>?

PART II--BACKGROUND INFORMATION

38. How long have you served in the Militia?_____

39. What is your unit's Unit Identification Code (UIC)? _____

40. Are you currently employed in your home unit? ____Yes _____No

41. If Not, what is your home unit?_____
UIC_____

42. What is your current military occupation (MOC)?_____
(Example: ADM CLK 831)

43. What is your rank?_____

44. How long have you held this rank?_____year(s) and_____months

45. What is your current component? (CIRCLE one)

Class A / Class B / Class C / Regular

46. What was the highest level of education you obtained? (CHECK only one)

Some High School ___ Where?

(Province or Country)

High School Completed ___ Where?

Some Community College ___ Where?

Completed Community College ___ Where?

Some University ___ Where?

University Grad ___ Where?

Other educational qualifications (Be specific)

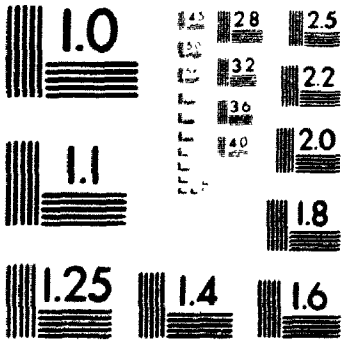
_____

Where obtained?_____

47. Briefly describe what kind of work <u>you</u> do in your military job.

2 OF/DE 2

PM-1 3½"x4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT



48. How long have you held this military job? _____ months

49. What kind of formal training have you had for your military occupation and job? Include civilian school or on-the-job training, military training, or previous jobs and experience.

50. How many other people in your immediate working group held the same military job as yours (in the same office or section)? _____

51. How many of these are women? _____

52. How long have women been working in the group? _____yrs._____months

53. Were you the first servicewoman ever to be employed in this group?_____Yes_____No

54. About how many people do you meet with or interact with every day in your military job (include customers or people in other related groups)?

_____

55. About how many of these are women? _____

56. In some jobs, the work is very structured, that is, it must be done only in one-particular way and in a specific order. In others, workers have a lot of freedom to divide up the work and do it in any order, as long as it all gets done. CIRCLE the number on the scale below that best describes the unit where you work.

Very structured	1	2	3	4	5	Lots of freedom

57. In some units, newcomers have to prove themselves or are given a hard time before they really become part of the group. In others, people go out of their way to help the newcomers without even being asked. How does your unit <u>generally</u> treat newcomers? CIRCLE the number on the scale below that best describes how newcomers are treated when they arrive at your unit.

Newcomers are given rough time	1	2	3	4	5	Newcomers a are helped a lot

58. As a newcomer, how were you treated?

I was given a rough time	1	2	3	4	5	I was helped a lot

59. In some units, people are able to work very independently, they don't need to talk to other people at all to get the job done. In others, people have to work closely as a team and talk to each other all the time to get the job done. CIRCLE the number which best describes your job?

Each member works independently	1	2	3	4	5	Teamwork is required

\ How satisfied are you with each of the following? CIRCLE only one response for each question.

1=very satisfied.....5=Very dissatisfied

60.	a.	Your present job	1	2	3	4	5
61.	b.	Your coworkers	1	2	3	4	5
62.	c.	Your supervisor	1	2	3	4	5
63.	d.	Reserve/Militia employment in general	1	2	3	4	5

64. How do you think <u>the majority of men</u> in your work group feel about women in the unit? CIRCLE the response that best describes the attitudes of the majority of the men in your work group.

a. They think women have no place in the unit.

b. They're somewhat negative and would rather not have them in the unit.

c. They don't care one way or the other.

d. They're somewhat positive about having them in the unit.

e. They're very positive about having them in the unit.

\ The following statements describe some work groups. For each statement, CIRCLE the number that tells how much you agree or disagree with the statement as it applies to your present work group.

		1 "Strongly agree"	2 "Agree"	3 "Disagree"	4 "Strongly disagree"
65.	a.	Group members put a lot of energy into what they do around here.	1	2	3	4
66.	b.	Group members tend to hide their feelings from one another.	1	2	3	4
67.	c.	The more effective group members help the less effective ones.	1	2	3	4
68.	d.	The officers have very little time to encourage subordinates.	1	2	3	4
69.	e.	The work here is repetitious and boring.	1	2	3	4
70.	f.	Being in this unit helps Militia personnel live up to their potential.	1	2	3	4
71.	g.	This is a very well-organized unit.	1	2	3	4
72.	h.	There is frequent turnover of Senior NCMs in the unit.	1	2	3	4
73.	i.	All service members are expected to take leadership roles in the unit.	1	2	3	4
74.	j.	Obeying rules in this unit seems to be more important than getting the work done.	1	2	3	4

		1 "Strongly agree"	2 "Agree"	3 "Disagree"	4 "Strongly disagree"
75.	k.	Senior NCMs sometimes argue among themselves.	1	2	3	4
76.	l.	Senior NCMs encourage Junior NCMs to talk about their work problems.	1	2	3	4
77.	m.	Regulations in the unit are clearly understood by all personnel.	1	2	3	4
78.	n.	Officers, and Senior NCMs expect too much of the Junior NCMs.	1	2	3	4
79.	o.	My immediate supervisor appreciates the work I do.	1	2	3	4
80.	p.	The work our group does is important to the organization.	1	2	3	4

81. How do you think <u>your supervisor</u> feels about women in the unit?

CHECK the correct response. Is your supervisor Male____ or Female____?

82. Now, CIRCLE the response that you think best describes the feeling of your supervisor.

    a. He/she is very negative about having women in the unit.

    b. He/she is somewhat negative about having women in the unit.

    c. He/she doesn't care one way or the other.

    d. He/she is somewhat positive about having women in the unit.

    e. He/she is very positive about having them in the unit.

83. CHECK the correct response. My supervisor is Male____ or Female____.

84. How do you think the majority of men in the Militia feel about women in the Militia?

    a. They think women have no place in the Militia.

    b. They're somewhat negative and would rather not have them in the Militia.

    c. They don't care one way or the other.

    d. They're somewhat positive about having them in the Militia.

    e. They're very positive about having them in the Militia.

85. What makes you think so?

86. What do you think the command attitude is toward women in the Militia at battalion, company or platoon level?

    a. They're very negative about having them.

    b. They're somewhat negative and would rather not have them.

    c. They don't care one way or the other.

    d. They're somewhat positive about having them.

    e. They're very positive about having them.

87. What makes you say that? Example(s)?

88. What do you like most about your present job?

89. and Why?

90. What do you like least?

91. and Why?

\ The following items are examples of things that may happen among members of a work group. CIRCLE the number that represents how often they happened to you when you first arrived at your unit, and how often they happen now.

NEVER.....1
RARELY.....2
SOMETIMES.....3
OFTEN.....4
ALMOST ALL THE TIME.....5

			When You First Arrived	Now
92.	a.	Others gave a rough time (not just kidding)	1 2 3 4 5	1 2 3 4 5
93.	b.	Others include you in job-related conversations	1 2 3 4 5	1 2 3 4 5
94.	c.	Others include you in non-job related conversations	1 2 3 4 5	1 2 3 4 5
95.	d.	Others include you in things they do together after work	1 2 3 4 5	1 2 3 4 5
96.	e.	You offer to help others	1 2 3 4 5	1 2 3 4 5
97.	f.	You need help	1 2 3 4 5	1 2 3 4 5
98.	g.	You ask coworkers for help	1 2 3 4 5	1 2 3 4 5
99.	h.	You ask superiors for help	1 2 3 4 5	1 2 3 4 5
100.	i.	Others ask you for help	1 2 3 4 5	1 2 3 4 5
101.	j.	Others offer to help you without your asking	1 2 3 4 5	1 2 3 4 5

NEVER.....1
RARELY.....2
SOMETIMES.....3
OFTEN.....4
ALMOST ALL THE TIME...5

		WHEN YOU FIRST ARRIVED	NOW
102. k.	Coworkers refuse to help you	1 2 3 4 5	1 2 3 4 5
103. l.	Supervisors refuse to help you	1 2 3 4 5	1 2 3 4 5
104. m.	Supervisors give you important jobs	1 2 3 4 5	1 2 3 4 5

105. Have you ever been on field exercises?_____Yes _____No

106. If Yes, how many?_____

107. How did you feel about your first field exercise beforehand?

108. Afterwards?

109. If more than one - How do you feel about them beforehand?

110. Afterwards?

111. Are there parts of your work in the field that are more often done by men than by women? _____Yes _____No What are they? Why?

112. Activities

113. Why?

114. Are there parts of your work in the field that are more often done by women than by men? _____Yes _____No
What are they? Why?

115. Activities

116. Why?

117. My supervisor appreciates the work men and women do in this unit. CHECK the response that is closest to your opinion.

_____ Equally
_____ Favours the men
_____ Favours the woman/women

118. Have you ever tried to go to the field but were refused?_____Yes____No

119. If Yes how often?_____

120. Why were you refused?

121. Have you been ordered to go to the field and managed to get out of it?_____Yes_____No

122. <u>If Yes</u> how did you get out of it,

123. and why?

124. Would you volunteer for combat duty in peacetime? CIRCLE one response.

1. Yes 2. Maybe 3. No

125. Would you volunteer for combat duty in wartime? CIRCLE one response.

1. Yes 2. Maybe 3. No

\ In the Militia, how often have you experienced sexual harassment on the job. CIRCLE the response that corresponds to your experiences.

1=Most of the time.....5=Never

126.a. In terms of unwanted touching?

1 2 3 4 5

127.b. In terms of sexual jokes or repeated sexual comments?

1 2 3 4 5

\ How often have you experienced sexual harassment from Militia men from outside your unit, off the job?

128.a. In terms of unwanted touching?

1 2 3 4 5

129.b. In terms of sexual jokes or repeated sexual comments?

1 2 3 4 5

130. In the Militia, how many times have you experienced sexual harassment in terms of offers of job benefits or threats of job action in return for sex? _____

131. Does the crude language men use while at work in the Militia disturb you? CHECK one response.

____Yes _____No

132. Why?/or/Why not?

133. Do the men change their language at work in the Militia when women are present? CHECK one response.

_____Yes _____No

134. If yes, how?

\ How would you rate yourself in the following traits, compared to all others in the Militia of your rank and MOC that you have known? CIRCLE the number for each question that best describes yourself.

	Lower		About the same			Higher	
135.a. Technical ability	1	2	3	4	5	6	7
136.b. Effort	1	2	3	4	5	6	7
137.c. Personal appearance	1	2	3	4	5	6	7
138.d. Ability to get along with others	1	2	3	4	5	6	7
139.e. Training for the job	1	2	3	4	5	6	7
140.f. Ability to work with men	1	2	3	4	5	6	7

141. What factors do you think are important in influencing how well a group accepts a woman in the Militia?

142. What are <u>the best things</u> about being a woman in the Militia?

143. What are <u>the worst things</u> about being a woman in the Militia?

144. How comfortable do you feel about living and working in a mostly male environment, such as the Militia? CIRCLE the best response for you.

1=Very comfortable..... 5=Very uncomfortable

1 2 3 4 5

145. Why?

146. Have you ever seriously considered leaving the Militia? CIRCLE only one response.

a. Yes, often
b. Yes, a few times
c. No

147. <u>If yes</u>, why did you not leave?

148. What are your future employment plans? CIRCLE only one response and explain what you will be doing if you are leaving the militia.

a. I intend to stay in the Militia.

b. I intend to stay but am not sure for how long.

c. I am not sure about my intentions.

d. I do not intend to stay.

e. I have given notice and will be gone within 6 months.

f. I plan to apply for the Regular Force.

149. <u>Explanation:</u>

150. Does the Militia do anything to encourage women to stay in? CHECK one response.

_____ Yes _____ No

151. If yes, what do they do (give examples)?

152. If No, what do you think the Militia should do to encourage women to stay?

153. Have you been excluded from things outside your workplace because you are a Militia servicewoman? CHECK one response.

_____Yes _____No

154. If Yes, what things?

155. Why do you think you were excluded?

156. What did you do instead?

157. Have you ever felt discriminated against in the Militia because you are a woman?_____ Yes _____ No

158. <u>If Yes</u>, in what way,

159. Who do you hold responsible for this,

160. And why do you think this was done?

161. Do you think people have treated you with favouritism in the Militia because you are a woman?
_____ Yes _____ No

162. <u>If Yes</u>, in what way (give an example),

163. Who was responsible,

164. And why do you think this was done?

165. Do most women in your unit feel as you do about the Militia?

_____ Yes _____ No

166. If No, what makes you say that?

167. How do you think most of them feel?

168. How has the expanded employment of women in the Militia had an impact on the attitudes of group members? CIRCLE the response that best describes the situation.

a. Made other group members much more negative.

b. Made other group members more negative.

c. No change.

d. Made other group members more positive.

e. Made other group members much more positive.

169. How has the expanded employment of women in the Militia changed <u>your</u> attitudes about Militia women as a group? CIRCLE the response that best describes <u>your</u> feelings.

a. Made my attitudes about women in the Militia much more negative.

b. Made my attitudes about women in the Militia more negative.

c. No change to my attitudes about women in the Militia.

d. Made my attitudes about women in the Militia more positive.

e. Made my attitudes about women in the Militia much more positive.

170. General Comments: Please write in any comments you may have concerning the design of this questionnaire and/or its contents.

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

Assignment of Items to Variables

SITUATIONAL-PERSONAL CHARACTERISTICS	Question Number - Royle (1984)	Question Number - Additional Items Created
Similarity to Stereotype		
Traditional or nontraditional	42,47	43,105-110
Technical skills	135	
Physical strength	7,8,23,24,26,27	
Job skills	97,98,99,49,139	
Male group experience	2,29,140	30
Positive Social Traits		
Appearance	7,8,137	
Cooperativeness	96,136,138	
Similarity of Beliefs		
Attitude toward women's role	23,24,26,27,31,34,35, 36,124	25,28,125,32,33,37
Experience working with men	29,23,24,26,27,140	
Socio-economic Status and Education		
Socio-economic status	6,12,15	13,14
Education	--	46

SITUATIONAL-SETTING CHARACTERISTICS		
Relative Status		
Rank	43	
Supervisory status	--	
Sex of Supervisor	81	
Percentage of Minority		
Proportion of women	50,51,54,55	52,53

CONTEXTUAL-SOCIAL ENVIRONMENT CHARACTERISTICS	Question Number - Royle (1984)	Question Number - Additional Items Created
Peer Group Norms and Importance of Peers		
Group attitudes about women in the Militia	64	84,85
Views of Persons with Reward Powers		
Supervisor's Attitudes	82	
Command Attitudes	86	87,150,151,152
Women in chain of command	81,82	
Group Climate		
Moos(1973) Military Environment Inventory (modified)	65-78	79,80,117
Openness	57	58
Supervisor appreciates work done	--	79
Organization recognizes importance of group work	--	80

CONTEXTUAL-NONSOCIAL ENVIRONMENT CHARACTERISTICS	Question Number - Royle (1984)	Question Number - Additional Items Created
Physical Proximity, Acquaintance Potential, and Interdependence Requirements		
Longevity in the group	48	
Group Size	--	
Staffing Level	--	
Interchangeability	--	
Flexibility to structure work	56	
Teamwork required	59	

OUTCOMES***INTERMEDIATE	Question Number - Royle (1984)	Question Number - Additional Items Created
Interdependence		
Demonstrated helping	101,102,103	
Women's centrality to group	92,93,96,100,104	
Intimacy		
Non-work contact	94,95	

OUTCOMES***FINAL	Question Number - Royle (1984)	Question Number - Additional Items Created
Attraction to Person & Esteem of Person		
Harassment	126,127,128,129,130, 92	131,132,133,134
Women's feelings of acceptance	61,62,143	60,63,153-56,165-67
Attrition	144,146,148	145,147,149
Attraction to Class & Esteem of Class		
Attitude change toward women in the Militia	168,169	

RELATED DEMOGRAPHIC AND QUALITATIVE INFORMATION	
Year of birth	1
Number of brothers with military experience	3
Number of sisters	4
Number of sisters with military experience	5
Birth province	9
Country of birth	10
If immigrant, age of entering Canada	11
Father in Armed Forces	17,18,19
Mother in Armed Forces	20,21,22
Time in Militia	38
Unit Identification Code	39
Home unit code	40,41
Time in rank	44
Militia component	45
Present job-most like about it	88,89
Present job-least like about it	90,91
Field employment experience	111-113,114-16,118-20,121-23
Factors important to group acceptance of women	141
Best thing about being a woman in Militia	142
Worst thing about being a woman in Militia	143
Recognizing discrimination and favouritism	157-60,161-64

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

Summary Table of the Occupations and the Representation of the Militia Servicewomen in the Ottawa District who Participated in the Survey

N=102

Occupations: Traditional - Noncommissioned Members

Clerical	Frequency	Percentage
831 - Administration Clerk	25	25
841 - Finance Clerk	9	9
Service Support		
411 - Vehicle Technician	2	2
421 - Weapons Technician (Land)	3	3
711 - Medical Assistant	17	17
811 - Military Police	2	2
871 - Cook	1	1
911 - Supply Technician	10	10
935 - Mobile Support Equipment Operator	7	7

Occupations: Traditional - Officers

Service Support		
57 - Nurse	1	1
67 - Legal	1	1
69 - Logistics (Finance, Supply, Transport)	12	10
TOTAL	90	88%

Occupations: Non-Traditional - Noncommissioned Members

021 - Artilleryman	2	2
031 - Infantryman	6	6
041 - Field Engineer	3	3

Occupations: Non-Traditional - Officers

22 - Infantry	1	1
TOTAL	12	12%

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

Variables Used in Analysis

VARIABLE NAME	CONTENT
	SITUATIONAL-PERSONAL CHARACTERISTICS
Type of military occupation	42. Military Occupation Code (MOC). Classified into two groups: Traditional (Clerical & Service Support) & Non-traditional (Combat Arms)
Performance Self Rating	135. Self-assessed technical skills on a 7-point scale from 1=lower to 7=higher. 136. Self-assessed personal effort on the job on a 7-point scale from 1=lower to 7=higher. 137. Self-assessed personal appearances on a 7-point scale from 1=lower to 7=higher. 138. Self-assessed ability to get along with others on a 7-point scale from 1=lower to 7=higher. 139. Self-assessed training from the job on a 7-point scale from 1=lower to 7=higher. 140. Self assessed ability to work with men on a 7-point scale from 1=lower to 7=higher. Items 135-140 recoded (1=-3) (2=-2) (3=-1) (4=0) (5=1) (6=2) (7=3) Mean Self Rating: Scale of above 6 items where higher COMPOSITE score means more positive personal performance.
Physical strength	23. Number of hours spent in sports or physical activities.
Male group experience	2. Number of brothers. 29. Social life experiences in activities in mostly male groups on a 5-point scale from 1=none at all to 5=most of the time. Recoded (1=-2) (2=-1) (3=0) (4=2) (5=1)
Appearance	7. & 8. Height/Weight ratio (BMI= kg/m^2).
Beliefs in traditional female roles	31. Personal identification on a 5-point scale from 1=very contemporary (nontraditional) to 5=very traditional personal. 34. Marriage plans on a 6-points scale from 1=never married and plan to stay single to 6=living with someone. Recoded 6=1 35. Balancing career and family demands on a 5-point scale from 1=career more important, no children to 5=children most important, no career. 36. Number of children desired on a 6-point scale from 1=No children to 6=5 or more. 124. Volunteer for combat on a 3-point scale with 1=would volunteer and 3=would not volunteer. TRADITIONALITY: Scale of above 5 items where higher COMPOSITE score indicates more traditional values for women's roles.
Socio-Economic Status	6. 5-point scale from 1=working class to 5=upper-class.
Education	46. 8-point scale from 1=some high school to 8=other qualifications.
	SITUATIONAL-SETTING CHARACTERISTICS
Rank	43. Coded on a 10-point scale from 1=Major to 10=Private soldier.
Sex of supervisor	81. Coded on a 2-point scale 1=Male, 2=female.

VARIABLE NAME	CONTENT
CONTEXTUAL-SOCIAL ENVIRONMENT CHARACTERISTICS	
Men's attitudes	64. Attitude of majority of men in work group toward women in Militia, rated on 5-point scale from 1=no place in unit to 5=very positive about women in unit. Recoded (1=-2) (2=-1) (3=0) (4=1) (5=2).
Supervisor's attitudes	82. Attitude of supervisor toward women in Militia, rated on 5-point scale from 1=no place in unit to 5=very positive about women in unit. Recoded (1=-2) (2=-1) (3=0) (4=1) (5=2).
Command Attitudes	86. Attitude of command at regiment, battalion, or company level toward women in the Militia, rated on 5-point scale from 1=no place in unit to 5=very positive about women in unit. Recoded (1=-2) (2=-1) (3=0) (4=1) (5=2).
Work group climate	65 - 78. Climate subscales-- Involvement.....65+69/2 Peer Cohesion.....66+67/2 Officer Support.....68+76/2 Personal Status.....70+73/2 Order & Organization..71+72/2 Clarity.....75+77/2 Officer Control.....74+78/2 Means on abbreviated (2-item) versions of the Moos Climate Scales (Moos, 1973) from Army recruit companies, using 4-point scales with 65,67,70,71,73,74,76,77,78 recoded (1=4) (2=3) (3=2) (4=1). Higher scores on the first six scales indicates high levels of the characteristic being measured. High scores on the Officer Control, however, indicates a less rule defined leadership style rather than over control. 57. Openness to newcomers. Ratings on a 5-point scale from 1-newcomers given a rough time to 5-newcomers are helped a lot. Recoded (5=-2) (4=-1) (3=0) (2=1) (1=2) 79. Supervisor appreciates the work done by the women. Ratings on a 4-point scale from 1=strongly agree to 4=strongly disagree. 80. Work done by group important to the organization on 4-point scale from 1=strongly agree to 4=strongly disagree.
CONTEXTUAL-NONSOCIAL ENVIRONMENT CHARACTERISTICS	
Longevity in group	48. Amount of time in job in months.
Work structure	56. Flexibility in work structure. 5-point scale from 1=very structured to 5=lots of freedom. Recoded (1=-2) (2=-1) (3=0) (4=-1) (5=-2).
Teamwork	59. Amount of teamwork required to complete tasks. 5-point scale from 1=each member works independently to 5=teamwork required. Recoded same as 56.
OUTCOMES INTERMEDIATE	
First Arrived-Included on and off the job	93,94,95,96,100,104. Mean of 6-item scale of indicators of being included, given a central position, and being included on and off the job (included in job related conversations, in non-job related conversations, in off-work gatherings, women offers to help others, others ask women for help, and supervisor gives women important jobs) scored on 5-point scale from 1-never to 5-almost all the time.
First Arrived-Excluded	92,102,103. Mean of 3-item scale of indicators of exclusion behaviours (women given a rough time, coworkers refuse to help women, supervisor refuses to help women) on same 5-point scale used to measure the variable "First Arrived-Included on and off the job".

VARIABLE NAME	CONTENT
First Arrived- Accepted and helped	97,98,99,101. Mean of a 4-item scale of inclusion and needing help OK (woman needs help, woman asks coworkers for help, woman asks supervisor for help, others help woman without being asked) on same 5-point scale used to measure the variable "First Arrived-"Included on and off the job".
Now- Included on and off the job	Contains identical items and calculated same as "First Arrived- "Included on and off the job".
Now- Accepted and helped	Contains identical items and calculated same as "First Arrived- "Excluded".
Now-Excluded	Contains identical items and calculated same as "First Arrived- "Accepted and helped".
	OUTCOMES FINAL
Specific sexual harassment	130. Number of incidents of sexual harassment, defined as offers of job benefits or threats of job action in return for sexual favours.
Physical harassment- On & Off job- Unwanted touching	126. & 128. Frequency of each sexually harassing behaviour on a 5-point scale from 1=never to 5=most of the time. Both items recoded (5=-2) (4=-1) (3=0) (2=1) (1=2).
Verbal harassment- On & Off job- Sexual jokes or repeated comments of a sexual nature	127 & 129. Frequency of each sexually harassing behaviour on a 5-point scale from 1=never to 5=most of the time. Recoded same as 126 & 128.
Women's feeling of satisfaction	61. & 62. Mean of woman's feelings of comfort in Militia and satisfaction with coworkers and supervisor, rated on a 5-point scale from 1=very dissatisfied to 5=very satisfied. Recoded (5=-2) (4=-1) (3=0) (2=1) (1=2)
Attrition	144. Response to how comfortable woman feels living & working in mostly male environment, such as Militia, on 5-point scale from 1=very uncomfortable to 5=very comfortable Recoded (1=-2) (2=-1) (3=0) (4=1) (5=2) 146. Response to if woman is considering leaving the Militia, coded 1=Yes, often; 2=Yes, a few times; 3=No 148. Response to future employment plans on 6-point scale from 1=stay to 5=definitely leaving, plus 6=apply to Regular Force. Recoded (6=1) (5=-2) (4=-1) (3=0) (2=1) (1=2)
Change in attitudes towards women	168. Response to attitude change by group's members with women's expanded employment in the Militia from 1=members much more negative to 5=much more positive Recoded (1=-2) (2=-1) (3=0) (4=1) (5=2) 169. Response to perceived change in attitude of the woman herself with the expanded employment of women in the Militia from 1=my attitudes much more negative to 5=much more positive Recoded same as 168.

Source: C.A. Strom, Survey of Women in the Militia (Canadian Armed Forces), Ottawa, 1992.

END

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FIN