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Combat Motivation: The Human Dimension Correlates

by

Daniel T. Reeves, B.A.

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of
Master of Arts
Department of Sociology and Anthropology

Carleton University

Ottawa, Ontario

30 July

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The undersigned recommend to the Faculty of Graduate Studies
and Research acceptance of the thesis

COMBAT MOTIVATION: THE HUMAN DIMENSION CORRELATES

submitted by Daniel T. Reeves, B.A.
in partial fulfilment of the requirements for
the degree of Master of Arts

Thesis Supervisor

Chair, Department of Sociology and
Anthropology

Carleton University
August 29, 1990

ABSTRACT

High levels of morale and cohesion have been substantially linked to enhanced combat performance and operational effectiveness. Additionally, increased morale and cohesion is thought to reduce and/or mediate the effects of combat stress. A review of the existing morale and cohesion literature/instruments resulted in the development of a 92 item Combat Readiness Scale questionnaire which was subsequently administered to a Canadian infantry battalion (non-commissioned members, N=215). To further reduce the number of survey items and generate a number of hypotheses about underlying dimensions and structure, an exploratory factor analysis (Principal Components Analysis with oblique rotation) was completed yielding 56 questions loading on four factors and an additional four subscale factors. The final eight factor solution accounted for 53.9% of the variance. Factors were labelled Morale/Cohesion, Leadership Skills/Confidence (five scales), Professional Morale and Ideology (Military Ethos).

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Opportunities to interact with Dr. Reuven Gal, former Chief Psychologist of the Israeli Defence Force, and Colonel Gregory Belenky head of Psychiatry at the United States Walter Reed Army Medical Centre, were important to my understanding of combat morale and cohesion, and combat psychiatry respectively and represented generous contributions from leaders in these fields.

Although much of the work to develop the Combat Readiness Scale and this thesis involved the technical work required to support such an instrument (construct development, questionnaire and item design etc.), it is not possible for anyone to be exposed to the literature of humankind in combat and soldiers themselves and remain unmoved. Despite its inglorious purpose, there is an intensity of human spirit amongst true soldiers that reflects the best of our species.

Finally, to my significant other - Linda, you have my thanks.

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CHAPTER 1

INTRODUCTION

Combat Readiness: The Human Dimension Correlates

As we walked away from the bloodied trail I looked back over my shoulder at the lifeless bodies we had left behind. They were now stretched out alongside one another like ten sacks of fertilizer in the damp grass. A ray of sunshine broke through the thinning fog and illuminated the scene of death. A thought out of nowhere came to me, a paraphrase of a famous poem: Men once living now were dead. Shortly before, they had loved and were loved. Now they were lifeless bundles laid in a row. In this rude excuse for their own Flanders Field they presented their souls to God and their corpses to the buzzards. I walked away in silence. For the next several minutes, and not for the first time either, I wondered exactly what I was doing here in this foreign place. I asked myself what it was I found so valuable that I was willing to risk death for it, what it was I found so valuable I was ready to kill for it.

David Donovan
Once A Warrior King

One of the major functions of an army is to prepare to engage the enemy in combat. In order to do this, enormous human and economic resources are typically expended by the host society. These expenditures, however, do not guarantee that military personnel will

have the "esprit" or "will" to dominate once committed to battle. The common belief, that placing an individual in the soldier role will in of itself ensure his/her combat response, is essentially mythical. When equipment, manpower superiority and other military factors such as surprise and tactics are factored out, the success or failure of the military mission hinges dramatically, and perhaps solely, upon the human elements of combat motivation. These human elements, and how they may be related, have emerged (in this research at least) from first hand self-reports of combat behavior and from sociological, psychological and historical evidence. Official military histories, characteristically biased in favour of the military leadership involved, have had limited utility in this analysis.

This research will be conducted within the areas of comparative social organizations and the study of occupations and will specifically investigate the social and motivational dynamics of combat readiness. An exploratory instrument, which will be composed of original and replicative elements, will be developed and tested against an existing human dimension model of combat readiness. Following its administration to a representative sample of military combat personnel, a primary analysis of the data will be conducted in an attempt to test the model and confirm the relationship between question items and the constructs they were hypothesized to support. The social correlates of combat readiness which emerge as most dominant and inter-related will form the nucleus of a measurement instrument designed to measure combat potential prior to battle.

This thesis arose, then, from the realization that the human dimension of performance is a critical component of soldier behavior in battle and from the recognition that an examination of these human dimensions will reveal the characteristics which have not only sustained soldiers during war, but also substantially form the pattern of values, attitudes and beliefs that are peculiar to army culture.

The model of combat readiness used in this research, (which includes the related human elements of combat motivation), was developed by Wild (1988) (Figure 1). This model provides a link between morale and cohesion, and combat readiness. High morale and cohesion are also linked to individual initiative and self directedness, both of which are desirable characteristics in the modern soldier and act as "force multipliers" (i.e., potential enhancing effect on the real combat power of military units as derived from such factors as surprise, commitment, and teamwork (Sarkesian, 1980, pp. 11, 89)). Based upon this, Black (1987) suggested that the development of methods for creating and reinforcing human performance includes the understanding that an increase in psychological readiness (high morale and cohesion) ameliorates the incidence of combat stress reaction (CSR) in battle and accordingly he recommended the following changes to army operations:

- a. modify career development evaluation standards to reflect the leader's skill in developing cohesion, morale, and operational effectiveness within his or her unit;

Figure 1. The Human Components of Combat Readiness.

Note. From "Proposal for Studying the Human Dimension of Combat Readiness (Technical Note 5/88) by W.R. Wild, 1988. Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

- b. introduce measures of cohesion and morale into procedures and standards for evaluating operational effectiveness; and,
- c. evaluate unit cohesion and morale regularly, including during major army exercises.

Within the military establishment there has been some attempt to quantify the pre-conditions necessary to promote desirable combat performance and to develop an objective means with which to measure the human dimension of combat readiness -- at both the small unit and individual level (Gal & Manning, 1984; Griffith, 1988). To date, however, this research has not produced a validated instrument which can be used to predict actual combat performance.

In summary, this thesis is an exploratory attempt to develop an empirically based understanding of those human dimensions which relate to combat readiness.

Purpose

The purpose of this thesis is to:

- a. describe the development of a Human Dimension Combat Readiness Scale; and,
- b. provide empirical evidence of and explicate the relationship between the combat motivation components.

CHAPTER 2

COMBAT READINESS

How can one ask questions about soldiering if one does not even have a clue what it is actually like in everyday life. People outside the infantry have no idea what it's like to be a soldier. If they say they do - then they are lying to you.

Soldier's survey comment - 1990

The historical changes in the way that wars are conducted, fought and reported upon has had an impact upon the motivations and performance of the individual soldier. In his seminal work Men at War (1956), Wise describes a variety of soldiering patterns - variants of which currently survive in various contemporary militaries throughout the world. During the 18th century for example, motivation was maintained almost exclusively by corporal punishment and an officer had no hesitation in striking a common soldier for the merest infraction of

dress. Since desertion was endemic, the provision of isolated living quarters (barracks) became an instrument of control and the soldier found that almost all aspects of his life was regulated and strictly supervised. (Vestiges of this kind of isolation and control continue to be characteristic of the modern day military, although the most elemental forms are usually found only in basic training, military colleges and elite units). Wise reports that soldiers of this era typically fought by advancing in line at a slow pace. It was important that each man could see and be seen and was in actual contact with the soldier to his left and right. This contributed to the control that commanders (who were typically in full view of the troops) were able to exercise in battle. It comes as no surprise that the leadership maxim of the time was that of Frederick the Great - that the purpose of discipline was to teach the soldier to fear his officers more than he did the enemy (Wise, 1962, pp. 137). Wise contrasts this captive army, which was generally held in contempt by society at large, with that of the classical Greek soldier circa 480 B.C. Soldiers in this era represented one of societies highest embodiments and it was an honour to serve in the Greek 'phalanx' - which was seen as both a duty and a privilege.

Modern militaries since the 18th century have been characterized by an ever increasing degree of occupational specialization or division of labour. Prior to this period the majority of those who participated in war did so as infantrymen whose primary skills consisted of those necessary to close with and subsequently dispatch the enemy face to

face. As Cotton (1978) indicated - as a result of the pace and introduction of technology in warfare, by World War One the 'trench' infantryman was already a minority member of the army. New skills had grown up around the various innovations in weapons systems which now included tanks, airplanes and armour as well as a variety of functions within transportation and supply. By the end of World War Two this trend had resulted in the creation of 532 separate military occupations, with the infantry now representing only 30 percent of the total fighting force. Currently, with the advent of sophisticated weapons systems, automated fire control systems, electronics and computers, support occupations outnumber combat occupations by a ratio of six to one.

Military careerism has largely emerged as a response to the growth in the support occupations needed to service and maintain these complex systems and this in turn has affected the locus of control for military personnel. If the dominant 18th century motivator was fear of one's own leaders, the 20th century is characterized by attempts to create and maintain high levels of initiative and individual morale - based upon the need for independent and self motivated action. As Janowitz indicated (1960) - as the number of rank levels increased to 7 for non-commissioned members and 12 for officers, (reflective of this occupational complexity), this created limits to the command hierarchy's ability to monitor, control and report on individual performance.

Any discussion of combat readiness/combat motivation must

necessarily be examined in the context of these social, cultural and individual factors which provide the conditional parameters within which motivation is produced and exhibited.

The complexity of the human dimensions element within the combat readiness concept was explored through an initial review of the literature in this area. The study of motivation in general and work motivation in particular reveals a complex body of knowledge encompassing in part - needs theory, reinforcement theory, expectancy theory and balance and goal setting theory. Each has attempted to explore the essence of what motivated individuals to work and represents fundamentally different understandings of how individuals interact with their environment. While these theories go some way towards explaining normative peacetime behaviors they do not, however, as far as we know, generalize well to the combat situation. In reality, the actual behaviors exhibited in combat have rarely undergone empirical examination and, within the military itself, while other combat readiness related issues such as manning levels, equipment serviceability, and training have an established assessment procedure, the objective assessment of the human element of readiness has been left largely undeveloped.

The difficulty in assessing human readiness is directly related to the primary yardstick of an army's performance -- its effectiveness in battle. While most non-military organizations measure productivity and efficiency with regard to what is actually produced, the military must measure effectiveness without actually producing the combat product (Sarkesian, 1980). The problems associated with measuring

effectiveness in battle do not, however, disappear when armies engage in war. In fact the wartime condition creates even more confounding problems because personnel, equipment, weather, time of attack, sleep and various deprivation states etc. cannot be held constant. Military propaganda which operates at the level of half truth, limited truth and truth out of context also tends to render problematic any objective assessments regarding combat performance (Gabriel & Savage, 1978). In addition, there are the multiple confusions created by nationalism, patriotism and even the more mythical elements of heroism which act to confuse the combat picture. Additionally and most importantly, just what constitutes military success in an operation itself is open to a variety of interpretations. For example, does gaining an objective with a sustained loss of seventy five percent casualties indicate a military success? The answer to questions like these are often based upon the role and perspective of the observer. To a distant commander the answer may be a qualified yes, while to the unit involved with severe losses an unqualified no may become a yes over time as the event evolves into a battle honour in the history of the unit. How well soldiers fought, then, is subject to many interpretations - themselves subject to the demand characteristics and institutional influences of the military. Adding to this confusion, is the role that the vested interest of and subjective assessments by military officers has played as career progression to the next rank becomes the primary "mission" of each officer in the chain of command.

In this exploration, Combat readiness represents the concept of measuring the potential for a unit to perform prior to its being

committed to battle. The human element of this readiness is based upon those attitudes and soldier characteristics which have actually been associated with combat performance.

Previous research indicates the importance of human dimension elements in combat (Solomon & Mikulincer, 1986; Solomon & Noy, 1986; Sorley, 1980; Stouffer, Lumsdaine A.A., Lumsdaine M.H., Williams, Smith, Janis, Star, & Cottrell, 1949). The ability to measure these human dimensions will aid commanders in their assessment of soldier/unit readiness and can be used to assist them in creating the conditions under which combat readiness can be optimized.

A review of the literature on morale, cohesion, readiness, and combat effectiveness confirmed the appropriateness of Wild's (1988) readiness model in general, and the combat motivational environment in particular (Figure 1 refers). Several human dimension instruments were also reviewed including; the Combat Readiness Morale Questionnaire (Israel), Unit Cohesion and Effectiveness Questionnaire (U.S. Army), Platoon Cohesion Index (U.S. Army), and the Seashore Cohesion Index (U.S. Army). Accordingly, the following definitions were adopted from the model (the cooperation component from the model was not operationalized for the purposes of this study due to its focus on senior officer relationships):

- a. Leadership. The direct product of leadership is a soldier's trust and confidence in their leaders. Good leaders exhibit characteristics which have been linked to enhanced combat performance (Gal, 1983; Marshall, 1947; Sarkesian, 1980; Shils & Janowitz, 1948; Smith, 1973);
- b. Personal Morale. The psychological state of mind characterized by a sense of well being, eagerness and willingness to sacrifice (Gal & Manning, 1984; Ingraham & Manning, 1981; Little & Janowitz, 1964; Shils & Janowitz, 1948; Stouffer et al., 1949);

- c. Professional Morale. Soldiers' confidence in their skills and abilities as a soldier (Stouffer et al., 1949; Gal & Manning, 1984);
- d. Ideology. Ideas which form the basis of a system, or a manner of thinking which is characteristic of internalized normative beliefs, legitimacy, and commitment (Cotton, 1979; Janowitz, 1960; Moskos, 1970);
- e. Small Group Morale. The sense of well being that stems from the group; the degree of confidence, effectiveness, and persistence with which the recognized goals of joint enterprise are pursued (Gal & Manning, 1984; Kellett, 1982; Marshall, 1947; Stouffer et al., 1949);
- f. Cohesion. The resultant of all forces acting on members to remain in a group; the bonding together of soldiers in such a way as to sustain their will and commitment to each other, the unit, and the desire to accomplish the mission despite combat or stress (Gal & Manning, 1984; Griffith, 1988; Lott & Lott, 1965; Manning & Ingraham, 1987; Shils & Janowitz, 1948; Siebold, 1987);
- g. Stability. Time in unit, number of supervisors, and time away from unit (Cotton, 1979; Gabriel & Savage, 1978; Kellett, 1982); and,
- h. Intentions. A stated intention to enter and do well in combat, to remain in the combat arms, and stay within the organization (Ajzen & Fishbein, 1980; Stouffer et al., 1949).

Morale and Cohesion

I warrant you, you shall find the ceremonies
of the wars, and the cares of it, and the forms
it...to be otherwise.

William Shakespeare
Henry V

The thing is simply this, that out of an average 100 men
along the line of fire during the period of an encounter,
only 15 men on average would take any part with the weapons.
...In the most aggressive infantry companies, under the most
intense local pressure, the figure rarely rose above 25% of
total strength from the opening to the close of an action.

Col. S.L.A. Marshall

The critical importance of human dimension factors in any future conflict has been established (Gal, 1986a; Griffith, 1988; Siebold, 1988; Stouffer et al., 1949;). High morale and cohesion are related to enhanced combat performance, considered a preventative against combat stress reaction, and seen as an important element in a soldier's will to fight. They are also indicative of successful military socialization and commitment to army values and are the direct product of successful leadership. The importance of specific human dimension factors in combat is supported by research outlined in the following paragraphs.

Studies of the German Wehrmacht (Shils & Janowitz, 1948) concluded that German army successes in The Second World War were attributable to the importance of the primary group which served to establish and enforce group norms and provide the solidarity necessary to sustain soldiers in the combat situation. Primary group theory explains combat motivation in terms of a soldier's intense social, psychological and emotional attachment with a few immediate comrades and it is this "shared deprivation, stress and constant personal interaction and communication which allows the soldier to endure combat" (Westbrook, 1980, p. 251). The implication here is that soldiers are more likely to continue fighting if they are members of sections and platoons with high positive identification, mutual caring and affection. Stouffer et al. (1949), in his seminal Second World War work, The American Soldier, found the most salient predictors of combat performance to be a willingness to enter combat, confidence in one's own soldiering abilities, confidence in leaders, and intentions to do

well. A survey of American soldiers from this study found that when asked which factors were most important in keeping them going in combat they reported: ending the task (39%); solidarity with the group (14%); thoughts of home (10%); and, a sense of duty and self-respect (9%). More recent studies have confirmed the relationship between high morale and cohesion and enhanced performance (Ingraham & Manning, 1981; Siebold, 1988).

In addition to the importance of the primary group, high levels of morale and cohesion also act to increase combat performance by reducing the effects of combat stress (Gal, 1986a; Marlow, 1979). Psychiatric casualties during war vary, but can range from as high as 20 to 50% of the total wounded-in-action (Belenky, 1987; Mullins & Glass, 1973; Noy & Solomon, 1986). McAndrew (1988) estimates that Canadian stress casualties numbered over ten thousand during the First World War and that it was quite likely that some of the 25 Canadian and 346 British soldiers shot by firing squads during the war were in fact psychiatric cases.

By the Second World War combat stress casualties had become as expected as the physical ones. In the Israeli Defence Forces, low unit morale and low levels of combat confidence have produced larger numbers of combat stress reactions (CSR) than units with high levels of morale and confidence (Gal, 1986a). Conversely, highly motivated and cohesive units have been linked with increased combat effectiveness and decreased psychiatric casualties (Belenky, 1987; Gal, 1986a; Grinker & Spiegel, 1945; Motowildo & Borman, 1978; Oliver, 1987; Price, 1984; Shalit, 1985; Shaw, 1983). Any action to proactively reduce CSR casualties will increase the number of soldiers

available for combat, thus having an impact directly on operational effectiveness.

Ideology and Socialization

Sociological research concerning the modern military has identified two modal orientations reflected by military members. Janowitz (1960) postulated the original thesis which subsequently generated comment from virtually every military sociologist during the past 30 years. With some variations, the modal theme sought to define the attitudinal and structural terrain which characterized military service. Prior to Janowitz, the military was probably viewed as one-dimensional and unchanging. The modal types are really ideal types which describe alternate conceptions of military service identified as either 'institutional' or 'occupational'. The 'institutional' military is service in which one has a 'calling' or a vocational sense of one's work. This means that members adhere to the principle that the institution represents a higher good and purpose which transcends individual self interest. For example priests, medical doctors and politicians do not normally divest themselves of their roles and the norms which are associated/attached to them even when they are or perhaps especially when they are at home or are in social situations - in fact these roles are often hardened and consciously displayed during these situations. Service before self, duty, honour and country are terms which support this modal orientation. Other characteristics which are supportive of the mode are; unconditional or total liability, frequent and uncontrolled moves, subjection to military law and discipline and the unwillingness/inability to resign, strike or

negotiate working conditions.

In contrast to this more traditional orientation, the 'occupational' mode is defined in terms of the marketplace. Supply and demand and the primacy of self interest are dominant in the mode as are; monetary compensation preferred over all other benefits, compensation linked to skill differences and limited liability service. An 'occupational' soldier does not wish to live on base, does not want to work more than a 40 hour week and does not want any military interference in his 'private' off duty hours or with regard to family members. This mode has also been referred to by Moskos (1970) and others with regard to the increasing 'civilianization' of the military. Cotton's work (MA,Phd) theorized the existence of a value system which is specific to the military. Originally postulated by Moskos (1970) and subsequently operationalized by Cotton's development of the Military Ethos Scale (MES) (1979), ethos can be defined as the distinguishing character, sentiment, moral nature or guiding beliefs of a person, group or institution. Accordingly, Cotton's scale was based upon responses to questions designed to reveal contrasting role orientations that were thought to exist among soldiers. Cotton used a 6 point scale which had a range of 6-30. He deemed values below 18 to indicate relative support for the occupational mode while values above 18 showed relative support for the vocational mode. The group found to have the highest mean ethos values was the senior combat officer category while the lowest scoring group was the junior non-commissioned combat troops. Results of this study supported the ethos construct and suggested that there was a tension between those who were primarily

'institutionally' oriented and those with an 'occupational' attitude towards military service. This dynamic tension which originates from an organization (which makes unlimited demands upon a membership who are less committed to the ideals of selfless service) is evidenced by attrition from service and by decreasing levels of military ethos.

Commitment to the beliefs and values of the group (ideology) and internalization of army norms (socialization) are thought to be related to a soldier's overall organizational loyalty, an individual's willingness to remain in the army, and an indication of the degree to which the military has been successful in the socialization process. Leading theorists have written that if soldiers are committed and believe in the dominant value system of the army, they will possess the potential to be more forceful agents in combat (Cotton, 1979; Gal, 1986b; Moskos, 1975; Stouffer et al., 1949).

Leadership

For I am a man under authority, having soldiers under me:
and I say to this man, Go, and he goeth; and to another, Come,
and he cometh.

Matthew 8:9

Finally, and perhaps most critically, leadership effects all aspects of the motivational environment. According to Huntington (1957) the skill of officership is neither a craft nor an art but an extraordinarily complex intellectual skill requiring comprehensive study and training. Historically, the officer corps as we know it, however, did not exist prior to the nineteenth century. Traditionally officership was

either mercenary or aristocratic in origin, with business pursuits and adventure the dominant motivators. Under the mercenary system the officer was in fact an entrepreneur who raised a company of men and offered their services for sale. He was himself an individual who might have more or less vocational skill than his "employees".

The concepts of modern discipline and responsibility were notably absent in mercenary warfare and war as a predatory business predominated. Replacing this system, Huntington (1957) describes how the divine right of Kings and social class operated to appoint aristocratic members to officer rank - regardless of ability and often by purchase - but more often by virtue of coercion and bribery. Military forces thereafter became an extension of national control and the military function for the first time became socialized. Military professionalism originated in 19th century Prussia when commissioned status first required education, professional knowledge and valor. A conscious attempt was made to have class preference abolished. According to Janowitz (1960), the current officer corp of the western industrialized nations is comprised of a cross section of society selected on a geographic basis and based upon academic performance, intelligence tests, and personal suitability factors.

In the modern military context, Stouffer et al. (1949) had identified the importance of the leader by concluding that only the leader could command full support of his unit. He saw the leader as the natural focus of group unity and a major factor in the everyday lives of men. Stouffer saw that the relationships built up by the leader would have a dramatic effect on the solidarity and cohesiveness of the group. He

noted further that good leaders were individuals who had knowledge, showed genuine care for their soldiers, and were both courageous and had a sense of coolness in battle. Sandusky (1943) characterized the good leader as one who advanced a soldier's interests and heightened their pride and self respect. Importantly, he believed that leaders were successful to the extent that they evoked devotion and cooperation in their subordinates. More recently, leadership has been measured by the extent to which soldiers have confidence and trust in their leaders (Gal, 1981b). Gal found that units which demonstrated high confidence levels in commanders translated this confidence into battlefield performance.

The study of combat potential suggests that there are separate and identifiable human dimensions which are necessary for optimum combat performance. Accordingly, these hypothesized dimensions (page 11-12 refer) translate into the following inquiry;

Thesis Statements

- a. The combat motivation model represents actual infantry human dimension characteristics as reflected in the Combat Readiness Scale; and,
- b. Military Ideology (ethos) is positively related to all other human dimension characteristics as developed within the Combat Readiness Scale.

CHAPTER THREE

METHOD

Questions selected or developed for the Readiness Scale represent constructs which have been linked to combat both historically and empirically. These items believed to be related to the hypothesized model components (i.e., morale, cohesion, etc.) were subsequently incorporated into the Readiness Scale under the following headings: Personal Morale, Professional Morale, Ideology, Small Group Morale, Cohesion, Stability, Intentions, and Leadership. Individual items selected were based upon the definition of the component they were thought to support.

As a result of a review of several existing human dimension instruments (as noted earlier) and the combat motivation literature, an initial pool of 152 questions was created - from which a 92 item questionnaire was developed representing each of the major human

dimension elements. Individual items were modified to ensure appropriate Canadian Forces (CF) army terminology and to clarify wording and question intent. To provide consistency with related questionnaires and maintain comparability, a five point Likert scale was adopted. Although response acquiescence may be encouraged, the scale was made uni-directional for the majority of questions in order to minimize recording errors. The questionnaire was initially administered to, and subsequently reviewed by, a small number of army personnel to ensure that it was easy to read and understand, and to check on the clarity of the administrative instructions.

Of the 92 items in the Readiness Questionnaire, 15 (Table 1) were deemed to be strongly representative of the combat readiness construct under development. When these items load on their respective components,

Table 1
Construct Validity Items

Construct	Flag Items
Personal Morale	4, 12
Cohesion	10, 15
Leadership	18, 20, 26
Professional Morale	32, 33
Small Group Morale	9, 17
Ideology	44, 47
Intentions	64, 66

they are indicators of increased support for the construct (acting as flag items) and give credibility to a particular factor solution within a specific factor analysis. The flag item correlations with factor

components appear in Table 6 of the Results section and the questions used as flag items are outlined in Appendix A.

Participants and Administration. The Canadian Forces as a whole has approximately eighty five thousand members. The Regular Force Canadian Army commanded by Mobile Command (FMC) comprises about eighteen thousand individuals - five thousand of whom are non-commissioned infantry soldiers. The Canadian army is an all volunteer force with the majority of soldiers enrolled for a 3 year (no release) contract. In the sample selected, 69% were single and 31% indicated married status. Most personnel live on-base in military barracks (63%) with 27% living in married quarters. Only 5% of this sample indicated that they lived off-base in civilian accommodation. The median soldier age was 21 with 50% of the sample being under age 23. Broken down by rank, 69% were Corporals and Privates (Cpl/Pte), 14% Master Corporals (MCpl) and 10% were Sergeants (Sgt) and above. A full 48% of the unit sampled had served one year or less with the military and only 8% had served 9 years or more. Average education levels indicated 67% had completed grade twelve or thirteen with 10% having grade ten or less. (Grade completed is not an accurate measure of educational attainment because provinces have grade levels which vary between 11 and 13)

Based upon questionnaire data regarding biographical background the most important reasons given for enrolment in the infantry were; to make more money (73%), to alleviate a personal problem (66%), and to learn a skill (52%). The least important reasons were to serve one's country (10%) and to prove one could make it as a soldier (6%). In terms of current career intentions, 77% reported that they would make the combat arms their career.

The Readiness Questionnaire was administered to infantry soldiers from three rifle companies and one combat support company of a Canadian infantry battalion (N=215 non-commissioned members -- primarily corporals and privates). Questionnaire administration occurred during a single day with three separate sittings. Two hundred and fifteen non-commissioned members participated, which represented approximately 90% of the eligible/available soldiers. The remainder of the battalion (whose theoretical strength is approximately 570) was unavailable for a variety of reasons including leave (annual, sick etc.), temporary duty, attached postings, United Nations duty, and attendance on various courses.

Questionnaire completion instructions were given in person by this author and followed a standardized format. The introduction explained the background of the study and stressed its importance. The voluntary nature of each soldier's participation was emphasized and the anonymity of individual responses was guaranteed. The soldiers read the questions from the booklet and responded by pencilling answers onto a standardized, machine readable answer sheet. Questionnaire completion times ranged from 30 to 60 minutes.

Upon completion of the questionnaire, respondents were asked to provide biographical data (age, rank, marital status, and education), information related to unit turbulence (time in platoon, absences from platoon, and number of different supervisors), number of soldiers in the unit who went through battle school together, and finally, questions regarding unit readiness. Open ended comments were also encouraged and at the end of each sitting, a number of soldiers were randomly chosen and interviewed in an attempt to elicit additional feedback.

Factor Analysis. An exploratory factor analysis (Principal Components Analysis (PCA), with oblique and varimax rotations) was computed to reduce the number of questionnaire items and to confirm that the items were correlated to the factors they were thought to support. This analysis was also intended to reveal the relationship between the constructs being measured and suggest the underlying dimensions of combat readiness. By analyzing various factor solutions and subsequently comparing the results to the original combat motivation model an exploratory test of the efficacy of model components was possible. Forced solutions for two to 12 factors were computed in order to determine which solution was most interpretable. The assumptions for factor analysis were satisfied through the assessment of item normality, the identification of outlying values, and an examination of the correlation matrix (Tabachnick & Fidell, 1983). In addition, the relationships (strength and direction) of construct validity items with the other items in the matrix were confirmed. Factors were considered for retention based upon the eigenvalues greater than one test and examination of the scree test results; in conjunction with the overall interpretability of the solution.

Items were retained based on the following criteria; loadings above .40 cut-off, sufficient communality levels, and overall interpretability of the factor construct. In addition, the correlation matrix was examined to determine if there was an adequate number of correlations in excess of .30 to confirm the appropriateness of PCA and that the retained items had correlations consistent with the

requirement that items within a factor be moderately correlated with each other (Tabachnick & Fidell, 1983).

In summary, a pool of 152 items was initially reduced into a 92 item format and subsequently administered to 215 non-commissioned infantry soldiers. The results were subjected to a PCA to further reduce the questionnaire size and confirm the existence of independent factors. The relationship between components was then established through component intercorrelations.

CHAPTER 4

RESULTS

The results reflect Combat Readiness characteristics and include; factors and supporting questions, component scale reliabilities (Cronbach's Coefficient Alpha), intercomponent correlations, validity item factor correlations, factor loadings, regression analysis and selected demographic and correlational information.

The factor analysis revealed the following human dimension components as distinct and supportable; Morale and Cohesion, Leadership (skills and confidence levels, respectively), Professional Morale, and Ideology (Figure 2 refers). The final Combat Readiness Scale questionnaire and item sources appear in Appendix B.

Figure 2. Human Dimension Components

Source: D.T. Reeves Combat Readiness Scale, 1990.

Morale/Cohesion Correlations

The correlation matrix was examined for relationships amongst items and those of interest are highlighted in Figure 3. Specifically, confidence in one's section commander was most highly correlated to personal morale $r=.33$ followed by confidence in the platoon commander $r=.28$ and the company commander $r=.25$. This makes intuitive sense since the section commander is virtually in constant contact with soldiers and supervises many of the day to day soldiering tasks. The relationship between the perceived platoon morale and the confidence in the company commander $r=.37$, however, was stronger than either of the remaining leaders. This suggests that although other leaders have more exposure/familiarity with the soldiers the officers at the company level are linked more closely to platoon morale by their soldiers since they are seen to be the originators of unit orders.

Surprisingly, confidence in one's own abilities as a soldier did not correlate with perceived platoon morale and was only somewhat ($r=.29$) correlated with personal morale. This finding may be a direct product of the relative inexperience of the majority of soldiers who were in the private/corporal rank or it could simply relate to the sense of powerlessness felt by the individual soldier regarding their potential to have any impact at all upon platoon morale.

Factor Solution

The eight factor solution from PCA was retained based upon its overall item and factor interpretability. This final solution yielded 56 items loading on eight factors accounting for 53.9% of the total variance, as reflected in Table 2.

Figure 3. Correlations Between Morale and Other Variables

Note. All correlations are significant ($p > .01$)

Source: D.T. Reeves Combat Readiness Scale, 1990.

Table 2

Principal Components Analysis
Human Performance Readiness Items
Oblique Rotation (N=215)

Factor Label	Eigenvalue	% of Var	Cum %
1. Morale/Cohesion	13.7	24.4	24.4
2. Leadership (Skills)	4.0	7.2	31.6
3. Ideology	2.8	5.0	36.6
4. Leadership (Confd Pl W0)	2.6	4.6	41.2
5. Professional Morale	2.1	3.7	44.9
6. Leadership (Confd Pl Comd)	1.8	3.2	48.1
7. Leadership (Confd Sect Comd)	1.7	3.0	51.0
8. Leadership (Confd Coy Comd)	1.6	2.8	53.9

Note. Cattell's scree test was used as the final cut-off for factor inclusion. (Varimax rotation results showed no significant differences)

Source: D.T. Reeves Combat Readiness Scale 1990

The original 92 item Readiness questionnaire was reduced to 56 items with item weightings on each factor ranging from .40 to .86. Factor loadings appear in Appendix C (Tables C1 and C2) and reflect the Readiness Scale items after oblique rotation.

Frequency Tables

The following items are representative of the questions which clustered around each factor and were retained in the final rotation. Selected frequency counts from the Readiness questionnaire are outlined in table 3, with full tables listed in tables D1 through D24 in Appendix D. The discussion pertaining to these tables (and others some of which were not retained for the final questionnaire) begins on page 34.

- a. Factor 1 - Morale/Cohesion
My platoon is ready for combat.
Soldiers in my platoon know what is expected of them.
I am confident in the combat abilities of soldiers in my platoon.
It feels good to be part of my platoon.
- b. Factor 2 - Leadership (Skills)
When I am talking to my immediate supervisor, he doesn't pay attention to what I'm saying.
My immediate supervisor gives us big jobs late in the day and wants them done before we leave work.
My immediate supervisor encourages soldiers to give their best efforts.
My immediate supervisor maintains high standards of performance.
My immediate supervisor offers new ideas for solving job-related problems.
- c. Factor 4 - Leadership (PL WO)
My platoon warrant stands up for the troops.
My platoon warrant is respected by platoon members.
In the event of combat I have confidence in my platoon warrant.
The Sr NCMs in my platoon stay with us in the field even when conditions are terrible.
The Sr NCMs in my platoon go to bat for their troops to get things they deserve.
- d. Factor 6 - Leadership (PL Comd)
My platoon commander is respected by platoon members.
My platoon commander stands up for the troops.
In the event of combat I have confidence in my platoon commander.
- e. Factor 7 - Leadership (Sect Comd)
My section commander stands up for his troops.
In the event of combat I have confidence in my section commander.
My section commander is respected by section members.
- f. Factor 8 - Leadership (Coy Comd)
My company commander is respected by those under his command.
My company commander stands up for the troops.
In the event of combat I have confidence in the company commander.

g. Factor 3 - Ideology

Differences in rank should not be important after hours.
 What a member does in his private life should be no concern
 of his supervisor or commander.
 What a member does in his off duty hours is none of the
 military's business.
 I would encourage my civilian friends to enlist in the army.
 A career in the Canadian Forces is worthwhile.

h. Factor 5 - Professional Morale

I think I would perform better in battle than other members
 of my platoon.
 I feel I am making a contribution to Canada by serving in
 the army.
 I am confident in my abilities as a soldier.
 I feel proud to be a soldier in the Canadian army.
 I am better trained than the enemy soldier.
 I feel the army has an important job to do in defending
 Canada.

Table 3

Proportion of Soldiers Agreeing
 with Selected Questionnaire Statements

Readiness Question	Percent Agreeing
My platoon is ready for combat.	33.2%
It feels good to be part of this platoon.	65.4%
I am confident of the combat abilities of platoon soldiers.	40.8%
Immed. supervisor encourages sdrs to give their best.	73.5%
Immed. supervisor offers new ideas for solving job probs.	82.1%
Immed. supervisor doesn't pay attention to what I say.	11.2%
In the event of combat I have confd. in the pltn. warrant.	74.9%
The pltn. warrant stands up for the soldiers in this pltn.	70.4%
The pltn. warrant is respected by soldiers in this pltn.	72.2%
If combat I have confd. in the pltn. commander.	37.7%
The pltn. commander stands up for soldiers in this pltn.	49.8%
The pltn. commander is respected by soldiers in this pltn.	43.5%
If combat I have confd. in my section commander.	61.0%
The section commander stands up for soldiers in this pltn.	66.4%
Section commanders are respected by soldiers in this pltn.	62.3%
If combat I have confd. in the company commander.	42.2%
The company commander stands up for the sdrs in this pltn.	48.4%
The company commander is respected by sdrs in this pltn.	41.2%
What a member does in private life is of no army concern.	47.5%
Differences in rank are not important after hours	57.4%
A sdrs private life is of no concern to a commander.	30.9%
I am proud to be a soldier.	82.9%
I am confident of my abilities as a soldier.	83.9%
My job is important for defending Canada.	76.2%

Source: Combat Readiness Questionnaire D.T. Reeves 1990

Evidence of soldier willingness to enter combat indicated that 45% of those surveyed believed that they were ready to go to a war zone while 46% neither agreed nor disagreed with the statement. Asked if they would make any attempts to avoid such duty, however, 58% indicated that they would do everything they could to remain behind. This ambivalence was in spite of the fact that 73% felt strong individual pride as a soldiers. (This compares with a 1989 national (Gallup) poll which indicated that 44% of Canadians would be willing to fight for their country - contrasted with 49% for Britain, 41% for France, 77% for U.S.A., 60% for Australia, 15% for West Germany and 89% for Israel.)

Platoon morale was assessed as very high by 43% of soldiers while 58% indicated that their personal level of morale was very high. Most soldiers (73%) saw their jobs as important to the mission but paradoxically only 27% indicated that they were proud to be in their particular unit. Notwithstanding this, a 63% majority responded that they felt good about being part of a platoon.

Finally, only 7% of the soldiers worried about going into combat, however, 64% agreed that the chances of injury or death as a soldier were high. A significant majority (80%) believes that the army has an important job to do in the defence of Canada although only 23% think that the current defence policy is in the best interests of the country.

Factors were considered to be somewhat correlated but still reflective of the relative independence necessary for orthogonality (Tabachnick & Fidell, 1983). Item to item correlations were moderate to high within each factor and are contained in the Appendix C (Tables C3 through C10).

The dominant factor in the analysis combined the personal, small group morale, and cohesion components of the model and accounted for 24.4% of the variance. This is consistent with Gal's (1984) findings which suggest the presence of a single dimension such as unit climate which may be connecting morale and cohesion. This may also be an indication of the very intimate linkage between morale and cohesion in the population sampled.

The first leadership factor, Leadership (Skills - Leader Attributes), of the five generated, is the second most dominant factor and accounted for 7.2% of the variance. In total, when Leadership (Skills) is added with the four additional leadership factors (i.e., Confidence in the Platoon Warrant, Platoon Commander, Section Commander and Company-Commander (each characterized by a different, specific leadership level)), 20.8% of the variance is accounted for. The Professional Morale factor accounted for 3.7% of the variance.

The Ideology component generated two separate sub-components; however, only one component had sufficient reliability to be considered for retention. The Intentions component generated one factor supported by five items but could not be retained because of low internal reliability.

Soldier Stability Factors

The Stability and Cooperation components of the model were not intended to be supported by the generation of unique factors. The Stability component is instead captured by the response to individual questions imbedded as part of the questionnaire preamble (e.g., length of

service in platoon, time away from unit, and number of different supervisors - Table 4 refers) and could be used as correlates to low or high combat readiness. The measurement of unit level cooperation was deemed to be knowledge held outside of the population targeted by the questionnaire and considered best reserved for the leaders' subjective assessment.

Table 4
Soldier/Platoon Stability Factors

Time in Platoon		Time Away from Platoon (over 12 months)		No. of Supervisors (over 24 Months)	
Months	Percentage	Months	Percentage	Supvrs	Percentage
0-3	34	1	38	1	5
4-6	30	1-3	35	2	14
7-9	15	3-6	21	3	17
10-12	3	> 6	5	4	64
> 12	17				

Source: D.T. Reeves Combat Readiness Scale, 1990

Over 80% of personnel had three or more supervisors during the preceding 24 month period. It should be noted, however, that only 17% of personnel had been in the platoon longer than 12 months with a full 64% having served 6 months or less. Importantly, most personnel had significant periods of duty away from the platoon with 35% away between 1-3 months and a 21% away for periods ranging from 3 to 6 months.

Component Characteristics

Table 5 outlines the number of items supporting each construct and the reliability (Cronbach's Coefficient Alpha) of the Readiness Scale components. In developing these components, it was deemed useful to examine the correlations between the validity items (from

Table 5

Inter-Item Reliability Analyses
of Components Comprising the Readiness Scale

Component Name	Number of Items	N	Reliability
1. Morale/Cohesion	17	194	.91
2. Leadership (Skills)	12	199	.89
3. Ideology (Ethos)	6	202	.77
4. Leadership (Confid Pl WO)	6	195	.80
5. Professional Morale	6	201	.73
6. Leadership (Confid Pl Comd)	3	202	.89
7. Leadership (Confid Sect Comd)	3	187	.87
8. Leadership (Confid Coy Comd)	3	206	.81

Source: D.T. Reeves Combat Readiness Scale 1990

Table 6

Construct Validity Item
Correlations with Supporting Components

Readiness Constructs	Validity Items	r
Morale/Cohesion	4, 10 12, 15	.77, .66, .64, .60
Leadership	18, 20, 26	.70, .69, .57
Professional Morale	32, 33	.69, .73
Ideology (Ethos)	44, 47	.68, .67

Note. Correlations are significant at .005 confidence level.
Correlations between Morale and other variables appear in
Figure 3.

Table 2) and the components that they are believed to support. Table 6 presents these correlations which are deemed to be of sufficient strength to instill confidence in the scale constructs. The components are relatively independent and have a good internal reliability with regard to individual construct validity items.

Since the components are hypothesized to represent overlapping human dimension aspects of readiness, it was anticipated that they would be somewhat correlated with one another. These inter-component correlations (Table 7) indicate that the components are related but

Table 7
Inter-Correlations of Readiness Components

Readiness Components		r							
		1	2	3	4	5	6	7	8
1. Morale/Cohesion	1	-							
2. Ldrship (Skills)	2	.46	-						
3. Ideology (Ethos)	3	.45	.35	-					
4. Ldrship (Confid Pl W0)	4	.41	.33	.33	-				
5. Professional Morale	5	.44	.35	.50	.31	-			
6. Ldrship (Confid Pl Comd)	6	.51	.24	.25	.27	.23	-		
7. Ldrship (Confid Sect Comd)	7	.44	.52	.30	.38	.26	.19	-	
8. Ldrship (Confid Coy Comd)	8	.47	.19	.29	.22	.34	.34	.18	-

Note. Based on sample sizes of N=189 to 206. All correlations significant to the .05 confidence level.

Source: D.T. Reeves Combat Readiness Scale, 1990

relatively independent. The Morale/Cohesion components correlate highest with three of the Leadership components, followed very closely by the Ideology, Professional Morale, and the remaining Leadership components respectively.

Multiple Regression

Multiple regression analysis using the primary factor (morale and cohesion) as the criterion variable (table 8 refers) confirmed the individual contributions of the other components. Partial correlations (unique contributions to the criterion variable) were highest for the leadership factors dealing with confidence levels for the platoon commander $r=.26$ followed by the company commander $r=.20$ and section commanders $r=.14$. The remaining correlations were similar for Ideology, confidence in the platoon warrant officer, Leadership Skills and Professional Morale $r=.09-.11$.

Table 8

Multiple Regression Analysis (Morale and Cohesion as Dependent Variable)

Human Dimension Component	Beta	r	Part r	Tol.	Sig.
Leadership (Confd Coy Comd)	.22	.47	.20	.80	.0001
Leadership (Confd Sect Comd)	.17	.42	.14	.72	.0042
Leadership (Confd Pl Comd)	.29	.51	.26	.83	.0000
Ideology	.13	.45	.10	.68	.03
Leadership (Confd Pl WO)	.11	.41	.09	.77	.05
Leadership (Skills)	.14	.43	.11	.71	.02
Professional Morale	.11	.44	.09	.67	.03

Note. Mult R (.73), R^2 (.53), F (3.06), Sig of F (.000)

Source: D.T. Reeves Combat Readiness Scale, 1990

Component means broken down by rank (table 9 refers) generally indicate more support for the component as rank rises. There are,

however, several exceptions. In three cases the rank of Master Corporal (section commander) has higher scale means on Morale/Cohesion, Leadership Skill, and Section Commander Leadership than the Sergeant rank group does. Privates/Corporals scored higher on Platoon Commander and Company Commander components. The inter-item correlations within the component show that the Private/Corporal rank group and the Sergeant group on average had higher inter-correlations between the items which made up the component. The leadership items were most highly correlated while the remaining component items were moderately correlated. The Professional Morale and Ethos correlations were significantly different for the Mcpl rank group where $r=.17$ and $.20$ respectively compared to $.34$ $.35$ and $.32$ and $.37$ for the other rank groups.

Table 9

Component Means,
and Inter-Item Correlations by Rank

Component	Item Means			Scale Means			Inter-item r		
	Pte/Cpl	MCpl	Sgt	Pte/Cpl	MCpl	Sgt	Pte/Cpl	MCpl	Sgt
Morale/Cohesion	3.20	3.34	3.23	54.47	56.79	54.95	38	34	44
Ldrshp (Skill)	3.61	3.76	3.69	43.32	45.17	44.23	39	30	54
Ideology (Ethos)	3.79	4.04	4.09	22.75	24.27	24.57	32	20	37
Ldrshp (Pl WO)	3.74	3.77	4.01	22.45	22.60	24.06	44	30	30
Profess. Morale	2.61	3.16	3.54	15.65	18.09	21.23	34	17	35
Ldrshp (PL Comd)	3.18	3.01	3.10	9.54	9.03	9.29	74	76	73
Ldr (Sect Comd)	3.77	4.01	3.67	11.31	12.03	11.00	78	74	69
Ldr (Coy Comd)	3.25	2.93	3.08	9.74	8.80	9.22	66	54	79

Source: D.T. Reeves Combat Readiness Scale, 1990

Scale correlations with Morale/Cohesion broken down by rank (table 10 refers) reveals a predictable pattern for Ethos (larger correlations for higher rank) and Professional Morale but deviations from this pattern thereafter. Confidence in the Section Commander for example has the exact reversal in pattern where $r=.10$ for Sgts, $.38$ for

Table 10

Component
Scale Correlations with
Morale/Cohesion by Rank

Component	Rank		
	Pte/Cpl	MCpl	Sgt
Leadership (skills)	42	65	41
Ideology (Ethos)	39	60	69
Leadership (Confid Pl WO)	43	30	44
Professional Morale	44	45	56
Leadership (Confid Pl Comd)	55	41	38
Leadership (Confid Sect Comd)	46	38	10
Leadership (Confid Coy Comd)	49	48	44

Source: D.T. Reeves Combat Readiness Scale, 1990

Mcpls and $.46$ for Pte/Cpls. The Mcpl rank group has the highest scale correlation for the Leadership Skills component and the lowest for Confidence in the Platoon Warrant Officer.

This section has analysed the results of an empirical testing of the combat motivation model. The statistical properties of the scale were reviewed and various demographic, correlational and frequency data examined. Following on from the thesis inquiry, the results reveal a Combat Readiness Scale which reproduces many important features from the combat motivation model - including a significant linkage between military ethos and all combat human dimension characteristics.

CHAPTER 5

DISCUSSION

The results indicate moderate support for Wild's (1988) conceptual model of combat readiness as depicted in Figure 1. The Gal and Manning (1984) finding that soldier morale and cohesion could not be separated was replicated in this study when distinct constructs, hypothesized for personal morale, small group morale and cohesion, combined to form a single factor. Stouffers' et al. (1949) combat factors relating to self confidence, pride and solidarity with the group, emerged as important and supportable components. The intentions component (based primarily on the Ajzen and Fishbein (1980) theory of Reasoned Action -- people do what they intend to do) was not retained in the final solution due to low item weightings and poor component reliability. The low correlations between Intentions and the other

components brings into question the interpretability of this component as a direct product or outcome of the motivational environment (as inferred by the conceptualized model Figure 1). Although this component could benefit from an improved sample size and an increase in supporting items, it is possible that since combat is seen as such a distant possibility, Intentions questions simply lack the immediacy and proximity necessary for relevance and therefore represent a questionable peacetime measure of readiness.

The Ideology component (military values and socialization) generally supports Cotton's (1979) and Moskos' (1970) work on the existence of a distinct military ethos. The ethos scale questions which emerged from the factor analysis were similar to those which combined in the original Cotton scale (1979) where questionnaire responses were highly correlated with four key variables; commitment to the CF, willingness to enter combat, support for the regimental system and occupational satisfaction. Interestingly, the Ideology and the Professional Morale components are moderately correlated, suggesting the importance of inculcating a dominant value system vis a vis the development of Professional Morale, and conversely, the potential role that Professional Morale may play in producing adherence to military values.

Although the Ideology (military ethos) can be clearly supported within the readiness model, it is also evident that Morale and Cohesion is sustained by a large number of other factors - most importantly the Leadership components. Ethos levels trend upwards with rank with the inter-item correlations being greatest for the Sgt and above rank. A

consistent pattern of higher variability within items is found by examining the MCpl group. This suggests that this less homogeneous response pattern for this important leadership group may contribute to inter-rank tensions regarding the range of ethos issues which were inherent to the scale. Specifically, this means that despite higher mean ethos scores for the MCpl rank these averages mask responses to individual questions which are in fact below the Cpl/Pte rank group. By using Cotton's (1979) Ethos categories (scores above 18 are considered evidence of vocational orientation), however, all groups appear to be very solidly within the "high" vocational range with scores of 22.75 (Cpl/Pte), 24.27 (MCpl), and 24.57 (Sgt and above). In contrast, Cotton found much lower ethos scores with Sgt's and above averaging 22, MCpl's 15.6 and Cpl/Pte 14.4. (Scores approaching the mid-twenties in Cotton's study were only attained by long serving members at senior officer levels).

Although direct comparability between the scales is not possible (question retention through factor analytic techniques vary) the Ethos scores represented the highest mean scores of any scale in the model with the following normative factors emerging:

- Loyalty to Canadian society
- professionalism
- self sacrifice (if not an habitual job requirement) and,
- self/unit pride.

Evidence of bifurcation (separation into the vocational and occupational modes) is not strongly supported by these data, although the trends in these directions are suggested. Ethos as an active agent of socialization does, nevertheless, appear to be operating.

Following from Stouffer et al., (1949) and Gal's (1981) work which emphasized the importance of confidence in leadership, the Leadership component was found to diverge most from the hypothesized model insofar as it did not coalesce into a single overall factor. Rather, attitudes toward supervisors at various leadership levels appear to be independent (i.e., confidence in the Platoon Commander was not highly correlated with confidence in the Platoon Warrant Officer).

Further research will be required to delineate the dynamics associated with confidence levels as they apply to both individual and group morale, however, its importance in the model and to the development of Morale and Cohesion is evident with the direction of Beta weights, the partial correlations supporting this component and its strong inter-correlations with the other factors. Respect for leaders was indicated to be greatest for senior non-commissioned officers 76%, followed by the platoon commander 70% and the section commander 54%. The soldier attitudes measured, confirm the close relationship between personal morale and platoon morale and support both Grinker and Spiegel's (1945) and Gal's (1986) findings which suggest a higher order factor like "unit climate" may be operating to produce morale. In the current study, support for army leaders was consistently strong with 66% of soldiers indicating that their immediate supervisor maintained a high standard of performance, 84%

believing that leaders used their ideas in solving problems and 75% responding that leaders encouraged the soldiers best efforts.

Other "global" unit characteristics included the fact that only 30% of the soldiers surveyed thought that their platoon was effective during field training while 92% felt they were effective during garrison duties. Paradoxically, soldiers felt that very few improvements were needed to improve field training (80%) while garrison duties were a source of dissatisfaction with 48% indicating many improvements were needed. As one young soldier put it:

There's too much mopp'n and clean'n
and not enough fight'n and fir'n.

As noted by Gabriel and Savage (1978) and Cotton (1979), constant unit turbulence places considerable constraint upon leaders who must inculcate high and resilient combat readiness characteristics within the group. Unit stability levels suggest that this turbulence will be a significant factor in determining if the conditions are present for optimally supporting combat readiness. The bonding which takes place between leaders and their followers cannot become fully developed in an environment of constant turnover. Supporting this contention is the 79% of soldiers who disagreed with the statement that 'soldiers in my platoon are some of my best friends'. (Friendships cannot evolve when personnel are constantly turning over) Soldiers commented:

I have been in my unit for 4 years, I have seen
Commanders come and go, it would be nice to work with
somebody for more than a few months!

The majority of the problem is a lack of manpower. How can we do the job with less than half the required troops. i.e. 4 or 6 man sections. Training becomes unrealistic. As soon as one platoon of recruits arrive we lose at least the same number to other trades or release".

My platoon is all new soldiers except 3 of us - they haven't even been on a winter exercise yet.

As the mean level of exposure to one's subordinates reaches very low levels so does the potential for forming substantive relationships based upon confidence and trust. Although these preliminary data are far from conclusive, there appears to be support for the notion that turbulence levels may be high enough to support the hypothesis that soldier bonding in this unit has been limited to its initial and embryonic stages.

At the present time, there remains no clear understanding of the complex manner in which the components are actually developed, interact and how they may be maintained and erode over time. There is, however, a substantive indication that the most salient factors contributing to the human dimension components are:

- respect for leaders
- confidence in leaders
- commitment to working as a team member and,
- confidence and pride in self.

The explication of these relationships and their validity for actual combat performance, however, remains the challenge of future research.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

The study of combat motivation/readiness is problematic. How does one begin to measure the capabilities of a professional sports team without seeing them play, being unaware of the conditions and rules which would prevail during any future contest - even to the extent of being unsure of just who the opponents are and where the sporting "contest" will take place? Battlefields are infinitely more complex than sporting events and are places of intense confusion. As a result, our ability to reconstruct the actions that take place there are limited. Out of necessity these reconstructions are undertaken by military commanders and the political leadership during wartime, however, the relationship between historical/journalistic accounts of

combat and actual battle behaviours is recognized as tenuous and at best suspect. Correspondingly, peacetime military readiness and operational effectiveness reporting do not generally include the human dimensions of readiness as they relate to morale and cohesion or include such areas as confidence in the leadership. When subjective assessments of this readiness are rendered, they become totally confounded by the desire of individual unit commanders to be seen in the best possible light - that is, leaders of highly motivated and cohesive troops.

Ironically, then, although the primary function of a military leader is to lead, leadership success is not objectively measured with reference to the human dimensions produced - characteristics which are expected to translate into soldiers readiness to fight. If the army is not producing these characteristics in its soldiers it is not fulfilling one of its primary functions/obligations in preparing for war. Currently, then, there is no mechanism whereby an empirically based investigation into the human correlates of combat motivation could provide this means for producing an objective and quantifiable measurement of combat readiness.

In first dealing with just what did motivate soldiers in combat, it was important to examine records of actual combat behavior. These were quite often personal and anecdotal accounts of combat from combat veterans but also included a review of the available social scientific literature in the area with an emphasis given to Stouffer's (1949) work with soldiers during World War II, Gal's research (1986, 1984)

into the Israeli soldier in battle and Belenky's contemporary (Vietnam) study of combat psychiatry. Several points emerged from this review. Firstly, and critically, any measurement of Combat Readiness was going to be a secondary measure of this dimension since there were no current hostilities against which the Scale could be validated. Secondly, there was a large number of factors which purportedly had something to do with behavior in combat - although there was no integrating theory which could explain their potential inter-relationships. It is important to note that although the Combat Readiness Scale was developed from actual combat characteristics, the final selection of items was based upon factors measured with a peacetime army unit.

To provide some organization to the factors thought to be part of the combat motivational environment a model of this environment was required. The Wild (1988) Combat Readiness Model was chosen because it was based upon a recent literature review combined with an extensive (and international) liaison with military researchers in England, Israel, Germany and the U.S. Each of the 152 factors/items (identified from the literature review et. al. and thought to be related to combat motivation) was examined and then placed within one of the eight construct domains within the model. A subsequent and more thorough analysis reduced the item pool to 92 questions which was then administered to an infantry battalion. In order to confirm that questions were in fact related to the model components as originally hypothesized, the Readiness Questionnaire was subjected to factor analysis.

Principal components analysis with both varimax and oblique rotations for various solutions ranging from two to twelve factors were considered. Although the eight factor solution was adopted as the final solution, the inclusion of factors five through eight was based more upon the desire to keep these elements intact for any subsequent confirmatory testing than for the relatively small amount of the variance that they accounted for. Even though there was some evidence supporting a two or four factor solution, it was preferable to risk accepting a group of what might turn out to be trivialized factors than, this early in the research, to exclude them from the remainder of any subsequent research. Additionally, in terms of interpretability, the leadership factors six, seven and eight dealing with the Platoon Commander, Section Commander and Company Commander as well as factor five respecting Professional Morale, all had strong intrinsic appeal for questionnaire inclusion. Originally the analysis was run using only the varimax rotation, however, the assumptions of orthogonality of the scale components came under question when inter-component correlations reached the .40 - .51 level. Using the oblique (assuming correlated factors) method did not, as it turned out, alter the outcome in any substantive way and for all practical purposes the solutions are considered to be virtually the same.

In examining the relationship between morale and those items which were correlated above the .23 level it was apparent that even the strongest correlation between personal morale and perceived platoon morale ($r=.57$) was only accounting for 25% of the variance. These modest correlations (though higher than similar U.S. and Israeli data) may reflect the presence of some higher order influence which interacts

to produce the remaining 75% of the variance not explained but supporting the morale construct. Confidence in the Section Commander is related to personal morale ($r=.33$) but does not correlate notably with platoon morale. On the other hand, both the confidence in the Platoon Commander and the Company Commander are related to personal and platoon morale. (.25 -.33) This suggests the relative influence that these officers have with regard to platoon morale. By contrast, the much more frequent (daily) and intimate contact that soldiers have with their Section Commanders may have a more significant impact on the level of one's personal morale. Although the MCpl occupies a pivotal position between the rank-and-file and the senior non-commissioned personnel, it is also a position of relative powerlessness - given that the vast majority of orders originate from officers with lesser ranks following them out. Both orders and the unit climate that they eventually produce may be ascribed to the officers within the unit.

Significantly, the question/item relating to confidence in one's equipment/weapons was virtually uncorrelated with morale. This is interesting because complaints about poor vehicles, weapons and opportunities to fire weaponry (and therefore acquire confidence) were very frequent in the unit (69%). These frustrations do not, however, appear to be related in any obvious way with morale. Gal (1984) had a similar finding for Israeli soldiers ($r=.24$), but did not find this for U.S. soldiers where equipment was correlated moderately (.37) with morale - thus suggesting that for Israeli and Canadian soldiers it is the people and the activity which are more important than the state of the equipment.

In terms of the mean scores on the Readiness Scale components, generally scores rose with rank. The higher one's rank the more likely one is to reflect the dominant norms and values specific to military service. There were, however, some notable exceptions. At the Master Corporal rank (Section Commander) scores here were higher than the Sergeant rank level for the Morale/Cohesion, Leadership Skill and Section Commander Leadership scales. Although this is contrary to Cotton's (1979) finding (where ethos rose in a linear fashion by rank) this rank has undergone significant changes since the time of the original Cotton study. Prior to 1976 Corporals were routinely required to serve four years in rank before selection for promotion to Master Corporal. Since 1976 and more profoundly in the last decade, Privates with confirmed potential are accelerated to Master Corporal - often with fewer than three years of experience. These individuals tend to be the best of the current group of soldiers and it is not surprising that they exhibit Readiness scores which often exceed their leaders.

Interestingly, the Master Corporal rank also had inter-item correlations which were moderately lower on the Professional Morale and Ethos scales than the other rank groups, although means scores on these components were above Private/Corporal and below Sergeant as was expected. This suggests that the Master Corporal rank is a little less homogeneous in its pattern of response to these Readiness Scales than the other ranks are. (An explanation for this may be found in the sharper focus of attitude which comes from occupying the estranged middle ground between the soldiers (as the first supervisor in the chain of command) and the remainder of the leadership.) This rank may

also be operating as Wray (1949) suggests - more as management and less as rank-and-file.

Indications of severe unit turbulence were perhaps the most disturbing finding in this study. Firstly, in order for bonding to take place within the unit, soldiers must experience all aspects of unit life over a considerable period of time. (One full year may be the minimum training cycle, peer and leadership exposure required.) Secondly, if this bonding has not taken place, measurements of morale and cohesion may simply be reflective of a unit which is continually cycling through the initial stages of human dimension development and therefore has not (and cannot therefore) achieve the optimum human dimensions potential necessary for battle. A full 75% of soldiers had less than nine months in the platoon with 65% having served less than six months. Additionally, it appears that only 17% of the platoon has even been with the platoon for longer than twelve months. It is within this tiny cadre that the potential for providing continuity within the unit must reside. This continuity is further eroded, however, by the time spent away from the platoon which, incredibly, is between one and more than six months for 71% of soldiers.

An even more foreboding measure of this turbulence is suggested when, notwithstanding, the fact that the administration day for the Combat Readiness questionnaire was very carefully selected to be mid-way in the yearly training cycle and on a day when there were no battalion, company, platoon or section taskings, only 245 out of more than 500 soldiers were actually available and in garrison to complete the questionnaire. That this turbulence has created an arrested state of morale development, may be suggested by indications that although

soldiers have high levels of confidence in their own soldiering abilities (84%) and believe that the job is important (76%), they are less confident of the abilities of other soldiers in the platoon (41%) with less than half (44%) agreeing that platoon morale was good. This pattern of strong personal confidence and belief in the importance of the job may stem from the large number of soldiers who have recently emerged from the training system - a system which is designed to inculcate these specific beliefs and characteristics in the soldiers that it produces. To this extent basic combat infantry training appears to have been successful while their initial employment has been somewhat unsuccessful in translating this potential from individual confidence and morale to team confidence and morale.

Finally and importantly, since a low level of military ethos has been associated with the civilianization of the military, any linkages to morale and combat readiness have consequences for our understanding of the socialization and values process whereby soldiers acquire combat motivation and organizational commitment. The inter-correlations between the Ethos scale and Morale and Cohesion scale ($r=.45$) (as well as the remaining Readiness Scales $r=.41-.51$) has provided some preliminary empirical evidence that Ethos is in some way linked to the development of personal and unit morale.

The Combat Readiness Scale is designed to be used in conjunction with other indicators of unit/soldier readiness including, commanders' subjective ratings and set piece activity etc. If the Readiness Scale eventually proves to be a valid instrument, it will assist commanders

to assess the human dimension components which make up the combat readiness index. In addition to providing an indication of current readiness levels, a validated scale could provide quantitative evidence of the effectiveness of combat readiness related to leadership interventions and serve as an objective source for problem identification and resolution. Over time, the Readiness Scale could provide an historical and statistical information base regarding platoon morale and cohesion levels.

Despite the difficulty in generalizing from behaviours and attitudes during peacetime operations to those of actual combat performance, there is growing evidence which suggests that at the start of any conflict the presence of high levels of morale, cohesion, and confidence in the leadership will be important factors in producing enhanced combat performance (Stouffer et al., 1949; Gal, 1986a). In recognition of this, an army which purports to be well trained, well lead and motivated should exhibit those readiness characteristics necessary for optimal combat effectiveness. The objective investigation of combat motivation, morale and cohesion and the attitudes, norms and values which may support combat behavior, may be critical in providing the final assurance that our armies have been adequately prepared to do their job. The Readiness Scale could prove to be valuable in ascertaining these readiness characteristics. Prior to this, however, this study will assist our understanding of army values, norms, and socialization - and beyond to the process whereby soldiers acquire combat motivation.

Future Research

Sarkesian's (1980) caveats (caution and performance validation), regarding the development of quantitative measures of readiness, are acknowledged as critical requirements for this research. To be considered a valid instrument for human dimensions diagnostic purposes, the Combat Readiness Scale must be subjected to confirmatory factor analysis which involves administration to a representative sample of non-commissioned members. After army confirmatory data have been collected and analyzed, the Scale must then be validated against army developed combat performance measures (e.g. combat exercises). To date no satisfactory measurements of combat (in the absence of actual combat) have been developed for this purpose.

Subsequent to this data collection and final modification of the Scale, measurements of readiness must then be undertaken with sufficient frequency to both reveal and capture the anticipated fluctuations in soldier and unit readiness. When the above validation and modifications of the Scale are completed, the instrument will lose its "experimental" status.

In order for individual administrations of the Readiness Scale to be made interpretable within the context of average individual and platoon level readiness scores, the instrument requires baseline data collection. Administrations of the Combat Readiness Scale over a two year period will provide a comparative database from which to interpret platoon level baseline scores.

Recommendations

Prior to use the Combat Readiness Scale will require:

- a. data collection and confirmatory analysis of the Combat Readiness Scale;
- b. validation of the instrument on actual army performance measures following from the confirmatory analysis; and,
- c. upon completion of the confirmatory analysis and validation, a collection of baseline data.

The technology inherent with modern weapons systems has created a soldiery which has a great deal of autonomy of action. Warfare no longer consists of marching in "line of sight" under the direct control of one's leaders. The potential for independent behavior in battle is therefore not only acknowledged in modern armies, but has become an accepted and important training requirement. The human dimensions which support this soldier motivation and "will" are critical factors in the development of an effective fighting force and may be the crucial element necessary for combat success. Without the capability of objectively measuring the degree to which units have been successful in producing these human dimensions, however, true unit potential will continue to be unknown and masked by military policies and practices which have been developed without regard to their human dimension consequences.

Military planners are now learning that human dimension failures require the same corporate resource response afforded to the failure of a major weapons system. It logically follows that an army which does not produce soldiers with high morale and cohesion, confidence in the leadership, acknowledged leadership skills, professional morale and a strong military ethos, is an army which has failed in its primary mission - and an army which will likely not sustain itself in battle.

To this end, research into the human dimensions of; combat motivation, combat readiness, and those social correlates supporting combat, will have an increasingly important role to play in successful army doctrines of the future.

REFERENCES

- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs: Prentice-Hall Inc.
- Belenky, G.B. (1987). Contemporary studies in combat psychiatry. New York: Greenwood Press.
- Black, E.R. (1987). Combat stress management: A literature summary (Technical Note 8/87). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.
- Cotton, C.A. (1979). Military attitudes and values of the army in Canada (Research Report 79-5). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.
- Gabriel, R.A., & Savage, P.L. (1978). Crisis in command. New York: McGraw-Hill.
- Gal, R. (1986a). A portrait of the Israeli soldier. New York: Greenwood Press.
- Gal, R. (1986b). Unit morale: From a theoretical puzzle to an empirical illustration - An Israeli example. Journal of Applied Social Psychology, 16(6), 549-564.
- Gal, R., & Manning, F.J. (1984). Morale and its components: A cross-national comparison. Washington, D.C.: Walter Reed Army Institute of Research.
- Griffith, J. (1988). Measurement of group cohesion in U.S. Army units. Basic and Applied Social Psychology, 9(2), 149-171.
- Grinker, P.C., & Spiegel, J.R. (1945). Men under stress. New York: McGraw-Hill.
- Ingraham, L.H., & Manning, F.J. (1980). Psychiatric battle casualties: The missing column in a war without replacements. Military Review, 60(8), 19-29.
- Ingraham, L.H., & Manning, F.J. (1981). Cohesion: Who needs it, what is it, and how do we get it to them? Military Review, 61(6), 2-12.
- Janowitz, M. (1960). The professional soldier. New York: The Free press.
- Kellett, A. (1982). Combat motivation: The behavior of soldiers in battle. Boston: Kluwer.

- Little, R.W., & Janowitz, M. (1964). Buddy relations and combat performance. In M. Janowitz, (Ed.), The new military: Changing patterns of organization. New York: Russell Sage Foundation.
- Lott, A.J., & Lott, B.E. (1965). Group cohesiveness as interpersonal attraction: A review of relationships with antecedent and consequent variables. Psychological Bulletin, 64, 259-309.
- Marlowe, D.H. (1979). Cohesion, anticipated breakdown, and endurance in battle: Consideration for severe and high intensity combat. Washington, DC: Department of Military Psychiatry, Walter Reed Army Institute of Research.
- Marshall, S.L.A. (1947). Men against fire. New York: William Morrow.
- McAndrew, W.J. (1988). Stress casualties: Canadians in Italy - 1943-45. Canadian Defence Quarterly, 17, 47-56
- Moskos, C.C. (1970). The American enlisted man. New York: Russell Sage Foundation.
- Motowildo, S.J., & Borman, W.C. (1978). Relationships between military morale, motivation, satisfaction, and unit effectiveness. Journal of Applied Psychology, 63, 47-52.
- Mullins, W.S., & Glass, A.J. (Eds.), (1973). Neuropsychiatry in World War II: Overseas theaters. Volume II. Washington, DC: Office of the Surgeon General, Department of the Army.
- Noy, S., Nardi, C., & Solomon, Z. (1986). Battle and military unit characteristics and the prevalence of psychiatric casualties. In N. Milgram (Ed.), Stress and coping in time of war (pp. 73-77). New York: Brunner/Mazel Publishers.
- Oliver, L.W. (1987, June). The relationship of group cohesion to group performance: A research integration attempt (Working Paper MTA 8707) U.S. Army Research Institute for the Behavioral and Social Sciences, Alexandria, VA.
- Price, H.H. (1984). The Falklands: Rate of British psychiatric combat casualties compared to recent American wars. Journal of Army Medical Corps, 130, 109-113.
- Preston, R.A., S.F. Wise & H.O. Werner (1956). Men in Arms. New York: Frederick Praeger.
- Sandusky, R. (1943). Leaders win where commanders lose. Infantry Journal Reader in The Officer, 1978, Department of National Defence, Canada.
- Sarkesian, S. (Ed.). (1980). Combat effectiveness, cohesion stress and the volunteer military. Beverly Hills, CA: Sage Publications.
- Shalit, B. (1985). Israel and the Lebanon War -- Psychological attrition and the face of battle. Stockholm: National Defence Research Institute.

- Shaw, J.A. (1982). Comments of the individual psychology of combat exhaustion. Military Medicine, 148, 223-231.
- Shils, E.A., & Janowitz, M. (1948). Cohesion and disintegration in the Wehrmacht in World War II. Public Opinion Quarterly, 12, 280-315.
- Siebold, G.L. (1987, April 9-11). Bonding in army combat units. Paper for Southern Sociological Society. Alexandria, VA.
- Siebold, G.L. (1988). The impact of cohesion on platoon performance at the Joint Readiness Training Centre. Report for Army Research Institute. Alexandria, VA.
- Smith, R.B. (1973). Why soldiers fight. Cambridge, MA: Social Structural Research.
- Solomon, Z., Mikulincer, M., & Hobfall, S.E. (1986). Effects of social support and battle intensity on loneliness and breakdown during combat. Journal of Personality and Social Psychology, 51(6), 1269-1276.
- Solomon, Z., Noy, S., & Bar-On, R. (1986). Who is at high risk for a combat stress reaction syndrome? In N.A. Milgram, (Ed.). Stress and coping in time of war. New York: Brunner/Mazel Publishers, 78-83.
- Sorley, L. (1980). Prevailing criteria: A critique. In S.C. Sarkesian (Ed.), Combat effectiveness, (pp. 57-93). Beverly Hills: Sage Publications.
- Steiner, M., & Neumann, M. (1978). Traumatic neurosis and social support in the Yom Kippur War returnees. Military Medicine, 866-868.
- Stouffer, S.A., Lumsdaine, A.A., Lumsdaine, M.H., Williams, R.M., Jr., Smith, M.B., Janis, I.L., Star, S.A., & Cottrell, L.S., Jr. (1949). The American soldier. Volume II. New York: John Wiley and Sons.
- Tabachnick, B.G., Fidell, L.S. (1983). Using multivariate statistics. New York: Harper and Row.
- Wesbrook, S.D. (1980). The potential for military disintegration. In S. Sarkesian (Ed.), Combat effectiveness, cohesion, stress and the volunteer military (pp. 244-278). Beverly Hills, CA: Sage Publications.
- Wild, W.R. (1988). Proposal for studying the human dimension of combat readiness (Technical Note 5/88). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.
- Wray, D. (1949). Marginal men of industry: The forman, American Journal of Sociology, 54, 298-301.

APPENDIX A
CONSTRUCT FLAG ITEMS

Construct Flag Items

Personal Morale

- Q4. It feels good to be part of my platoon.
Q12. My personal level of morale is very high.

Cohesion

- Q10. The soldiers in my platoon encourage each other to work together as a team.
Q15. Soldiers in my platoon would stick together in a combat situation.

Leadership

- Q13. When I am talking to my immediate supervisor, he doesn't pay attention to what I'm saying.
Q20. My immediate supervisor encourages soldiers to give their best efforts.
Q26. My immediate supervisor makes sure his role in the unit is understood by the men.

Professional Morale

- Q32. I am confident in my abilities as a soldier.
Q33. I feel proud to be a soldier in the Canadian army.

Small Group Morale

- Q9. If we were going to war, I would rather go with my platoon than with any other platoon I know of.
Q17. There is a lot of togetherness in my platoon.

Ideology

- Q44. What a member does in his off duty hours is none of the military's business.
Q47. A career in the Canadian Forces is worthwhile.

Intentions

- Q64. If my unit were to be sent to a war zone tomorrow I would be ready to go.
Q66. If my unit were to be sent to a war zone I would do everything I could to remain behind.

APPENDIX B
SOURCES OF SURVEY ITEMS AND THE COMBAT READINESS QUESTIONNAIRE

Combat Readiness Questionnaire

Sources of Survey Items

Topic	Item	Source
<u>Morale/Cohesion</u>	1-3	CRMQ
	4-10	UCEQ
	11-13	CRMQ
	14	PCI
	15	CRMQ
	16	UCEQ
	17	SCI
<u>Leadership</u>	18-29	UCEQ
	30-32	Stouffer
	33-34	UCEQ
	35-44	Stouffer
<u>Professional Morale</u>	45-50	Stouffer
<u>Ideology</u>	51-56	Cotton

Note. CRMQ - Combat Readiness Morale Questionnaire (Israel)
 UCEQ - Unit Cohesion and Effectiveness Questionnaire (U.S. Army)
 PCI - Platoon Cohesion Index (U.S. Army)
 SCI - Seashore Cohesion Index (U.S. Army)
 Stouffer - Stouffer et al., 1949
 Cotton - 1979

THE HUMAN DIMENSION OF
COMBAT READINESS
QUESTIONNAIRE

CANADIAN FORCES PERSONNEL APPLIED RESEARCH UNIT
(CFPARU) 1990

HUMAN DIMENSION OF
COMBAT READINESS QUESTIONNAIRE - EXPERIMENTAL

INSTRUCTIONS

(to be read out loud by survey administrator)

Research has confirmed that morale, cohesion, confidence in leaders and other human element factors are important for potential combat performance.

Your participation in this Questionnaire is encouraged and is voluntary. You will find that the questionnaire is interesting and takes approximately 45 minutes to complete.

Participants will remain anonymous. Do not write your name or SVC number on the answer sheet. Questionnaires will be used solely for research purposes and will not be made available to any person or agency not involved in this research. How you as an individual answer questions will not be reported. For reporting purposes, individual answers will be grouped. There are no right or wrong answers.

BIOGRAPHICAL INFORMATION

Before you begin we need some general information on who you are. We'll complete these questions together. Read the following questions to yourself while I read them aloud.

- SEX In the top centre of side one of the answer sheet find the section labelled SEX. Blacken M if you are a male and F if you are a female.
- GRADE Below the box labelled SEX find the box labelled GRADE or EDUC. Blacken the number which corresponds to the total number of years of formal education you have completed. (If more than 16, blacken 16.)
- AGE In the lower left corner find the box labelled BIRTH DATE. Write the year of your birth in the appropriate space and blacken the corresponding numbers.
- UIC Also in the lower left hand corner of the computer sheet find the section labelled IDENTIFICATION NUMBER. In columns A to D write your four digit Unit Identification Code (UIC) and blacken the corresponding circles. (If you do not know your UIC, the questionnaire administrator will provide you with the number.)

RANK In column E under IDENTIFICATION NUMBER, indicate your rank by blackening:

if you are a Cpl/Pte..... 0
if you are a MCpl 1
if you are a Sr NCM..... 2

MAR In column F under IDENTIFICATION NUMBER, indicate your marital status by blackening:

if you are single, separated, divorced, widowed 0
if you are married, living common-law 1

MOC In columns G to I under IDENTIFICATION NUMBER, indicate your MOC by blackening the numbers that correspond to your three digit MOC.

SERVICE In column J under IDENTIFICATION NUMBER, indicate the number of completed years that you have served in the regular force by blackening the appropriate number. Blacken 9 if you have nine or more completed years of service.

The following five questions refer to the platoon of which you are currently a member. Answer these questions by blackening the appropriate number in the specified column of the SPECIAL CODES section in the lower left hand corner of the computer sheet.

Identify your platoon by writing your platoon number in columns K and L of the special codes section and blackening the corresponding circles. For example, if you are a member of 6 platoon, write 0 in column K, 6 in column L and blacken the corresponding circles.

Now answer the following questions about your platoon.

How long have you been in your present platoon?

0-3 months blacken 0 in column M
4-6 months blacken 1 in column M
7-9 months blacken 2 in column M
10-12 months blacken 3 in column M
more than 12 months blacken 4 in column M

In the past 12 month period how much time have you spent away from your platoon (on course, TD, or for personal or other reasons? Do not include annual leave).

less than one month blacken 0 in column N
between one and three months blacken 1 in column N
between three and six months blacken 2 in column N
more than six months blacken 3 in column N

How many immediate supervisors or leaders have you had in the past twenty four months?

one supervisor blacken 0 in column 0
two supervisors blacken 1 in column 0
three supervisors blacken 2 in column 0
four or more supervisors blacken 3 in column 0

How many soldiers in your present platoon went through battle school with you?

none blacken 0 in column P
less than five blacken 1 in column P
between five and ten blacken 2 in column P
more than ten blacken 3 in column P
almost everyone..... blacken 4 in column P

INSTRUCTIONS

In answering the questions please follow these three steps:

1. Read each statement carefully. Decide how much you agree or disagree with each statement. You may find that some statements do not apply to you. If this is the case, leave this question blank and go on to the next question.
2. Once you have decided how much you agree or disagree, indicate this by blackening the circle on the answer sheet that corresponds to your response. Should you wish to change a response, erase your original pencil marking completely and blacken the correct response. Please do not make any stray marks on the computer answer sheet.
3. When you have answered all of the questions provide any comments you may have on the blank comment sheet provided. If there are any questions now, or at any time while completing the questionnaire, please do not hesitate to ask the questionnaire administrator. DO YOU HAVE ANY QUESTIONS AT THIS TIME? Now turn the page and begin.

SECTION I - MORALE AND COHESION

The following questions relate to morale and cohesion. On the answer sheet, please indicate the amount of agreement you have with each statement.

1. My platoon is ready for combat.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

2. Soldiers in my platoon know what is expected of them.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

3. I am confident in the combat abilities of soldiers in my platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

4. It feels good to be part of my platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

5. The level of morale in my platoon is very high.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

6. What is your evaluation of the overall effectiveness of your platoon in field training exercises?

- A) not effective
- B) slightly effective
- C) effective
- D) very effective
- E) extremely effective

7. I am satisfied with the social events in my platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

8. In my platoon my friends are ready to go to combat, if and when it is necessary.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

9. If we were going to war, I would rather go with my platoon than with any other platoon I know of.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

10. The soldiers in my platoon encourage each other to work together as a team.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

11. The soldiers in my platoon know what the unit is trying to accomplish.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

12. My personal level of morale is very high.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

13. The soldiers in my platoon are proud to be in this battalion.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

14. My job is important to the mission of the unit.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

15. Soldiers in my platoon would stick together in a combat situation.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

16. What is your evaluation of the overall performance of your platoon in garrison (inspections, cleanliness of barracks, individual task training, physical fitness, etc.)?

- A) not effective
- B) slightly effective
- C) effective
- D) very effective
- E) extremely effective

17. There is a lot of togetherness in my platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

SECTION II - LEADERSHIP

The following questions relate to leadership. On the answer sheet, indicate the amount of agreement you have with each statement.

18. When I am talking to my immediate supervisor, he doesn't pay attention to what I'm saying.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

19. My immediate supervisor gives us big jobs late in the day and wants them done before we leave work.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

20. My immediate supervisor encourages soldiers to give their best efforts.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

21. My immediate supervisor maintains high standards of performance.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

22. My immediate supervisor offers new ideas for solving job-related problems.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

23. My immediate supervisor is willing to listen to any problems.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

24. My immediate supervisor refuses to explain his actions.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

25. My immediate supervisor puts suggestions by the soldiers of the platoon into operation.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

26. My immediate supervisor makes sure his role in the unit is understood by the men.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

27. My immediate supervisor acts without consulting the men in the platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

28. My immediate supervisor makes us work a lot of extra hours.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

29. My immediate supervisor lets other supervisors interfere with my work group.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

30. My platoon warrant stands up for the troops.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

31. My platoon warrant is respected by platoon members.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

32. In the event of combat I have confidence in my platoon warrant.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

33. The Sr NCMs in my platoon stay with us in the field even when conditions are terrible.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

34. The Sr NCMs in my platoon go to bat for their troops to get things they deserve.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

35. The Sr NCMs trust the soldiers in this platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

36. My platoon commander is respected by platoon members.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

37. My platoon commander stands up for the troops.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

38. In the event of combat I have confidence in my platoon commander.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

39. My company commander stands up for the troops.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

40. My company commander is respected by those under his command.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

41. In the event of combat I have confidence in the company commander.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

42. My section commander is respected by section members.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

43. My section commander stands up for his troops.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

44. In the event of combat I have confidence in my section commander.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

SECTION III - PROFESSIONAL MORALE

The following questions relate to professional morale. On the answer sheet, indicate the amount of agreement you have with each statement.

45. I think I would perform better in battle than other members of my platoon.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

46. I feel I am making a contribution to Canada by serving in the army.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

47. I am confident in my abilities as a soldier.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

48. I feel proud to be a soldier in the Canadian army.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

49. I am better trained than the enemy soldier.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

50. I feel the army has an important job to do in defending Canada.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

SECTION IV - IDEOLOGY

The following questions deal with values. On the answer sheet, indicate the amount of agreement you have with each statement.

51. Differences in rank should not be important after hours.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

52. What a member does in his private life should be no concern of his supervisor or commander.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

53. What a member does in his off duty hours is none of the military's business.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

54. I plan on making the combat arms my career.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

55. I would encourage my civilian friends to enlist in the army.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

56. A career in the Canadian Forces is worthwhile.

- A) strongly disagree
- B) disagree
- C) slightly disagree
- D) neither agree nor disagree
- E) slightly agree
- F) agree
- G) strongly agree

Your assistance in completing this questionnaire has been important and is appreciated. If you have any comments please note them on the blank sheet provided.

APPENDIX C

OBLIQUE ROTATION LOADINGS,
ITEM LOADINGS BY FACTOR AND
ITEM CORRELATIONS WITHIN FACTORS

Table C-1

Factor Loadings of Readiness Items
After Oblique Rotation

Item	Factors							
	1	2	3	4	5	6	7	8
1.	.71							
2.	.65							
3.	.65							
4.	.64							
5.	.61							
6.	.61							
7.	.57							
8.	.57							
9.	.54							
10.	.53							
11.	.49							
12.	.48							
13.	.47							
14.	.47							
15.	.46							
16.	.43							
17.	.40							
18.		.76						
19.		.73						
20.		.69						
21.		.67						
22.		.67						
23.		.64						
24.		.61						
25.		.59						
26.		.58						
27.		.55						
28.		.50						
29.		.48						
30.			.71					
31.			.66					
32.			.60					
33.			.57					
34.			.55					
35.			.52					
36.				.86				
37.				.79				
38.				.76				
39.				.51				
40.				.49				
41.				.40				

Table C-1 (Continued)

Item	Factors							
	1	2	3	4	5	6	7	8
45.					.59			
46.					.59			
47.					.57			
48.					.56			
49.					.35			
50.					.46			
36.						.83		
37.						.81		
38.						.79		
39.							.79	
40.							.75	
41.							.73	
42.								.78
43.								.77
44.								.67

Note. 1. Factor labels are as follows:

- 1 = Morale/Cohesion
- 2 = Leadership I (Skills)
- 3 = Ideology (Ethos)
- 4 = Leadership II (P1 W0)
- 5 = Professional Morale
- 6 = Leadership III (P1 Comd)
- 7 = Leadership IV (Sect Comd)
- 8 = Leadership V (Coy Comd)

2. Only factor loadings above .40 are shown.

Total Variance Explained=53.9
N=215

3. Questions are renumbered to reflect those in the questionnaire (Appendix B)

Table C-2

Item Loadings by Factor

Item	Loadings	Question
<u>Factor 1 - Morale/Cohesion</u>		
Q 1	.71921	My platoon is ready for combat.
Q 2	.64965	Soldiers in my platoon know what is expected of them.
Q 3	.64085	I am confident in the combat abilities of soldiers in my platoon.
Q 4	.63713	It feels good to be part of my platoon.
Q 5	.62229	The level of morale in my platoon is very high.
Q 6	.62094	What is your evaluation of the <u>overall</u> effectiveness of your platoon in field training exercises?
Q 7	.57929	I am satisfied with the social events in my platoon.
Q 8	.56882	In my platoon my friends are ready to go to combat, if and when it is necessary.
Q 9	.55244	If we were going to war, I would rather go with my platoon than with any other platoon I know of.
Q10	.54120	The soldiers in my platoon encourage each other to work together as a team.
Q11	.51138	The soldiers in my platoon know what the unit is trying to accomplish.
Q12	.50567	My personal level of morale is very high.
Q13	.47850	The soldiers in my platoon are proud to be in this battalion.
Q14	.47047	My job is important to the mission of the unit.
Q15	.47524	Soldiers in my platoon would stick together in a combat situation.
Q16	.40829	What is your evaluation of the <u>overall</u> performance of your platoon in garrison (inspections, cleanliness of barracks, individual task training, physical fitness, etc.)?
Q17	.40066	There is a lot of togetherness in my platoon.
<u>Factor 2 - Leadership I (Skills)</u>		
*Q18	-.76181	When I am talking to my immediate supervisor, he doesn't pay attention to what I'm saying.
*Q19	-.71924	My immediate supervisor gives us big jobs late in the day and wants them done before we leave work.
Q20	.70021	My immediate supervisor encourages soldiers to give their best efforts.
Q21	.67506	My immediate supervisor maintains high standards of performance.
Q22	.66686	My immediate supervisor offers new ideas for solving job-related problems.

Table C-2 (Continued)

Item	Loadings	Question
Q23	.65016	My immediate supervisor is willing to listen to any problems.
*Q24	-.61456	My immediate supervisor refuses to explain his actions.
Q25	.57354	My immediate supervisor puts suggestions by the soldiers of the platoon into operation.
Q26	.57326	My immediate supervisor makes sure his role in the unit is understood by the men.
*Q27	-.55898	My immediate supervisor acts without consulting the men in the platoon.
*Q28	-.50928	My immediate supervisor makes us work a lot of extra hours.
*Q29	-.48374	My immediate supervisor lets other supervisors interfere with my work group.

Factor 3 - Ideology I

*Q51	-.68041	Differences in rank should not be important after hours.
*Q52	-.66644	What a member does in his private life should be no concern of his supervisor or commander.
*Q53	-.57351	What a member does in his off duty hours is none of the military's business.
Q54	.51838	I plan on making the combat arms my career.
Q55	.46605	I would encourage my civilian friends to enlist in the army.
Q56	.42215	A career in the Canadian Forces is worthwhile.

Factor 4 - Leadership II (Pl W0)

Q30	.85345	My platoon warrant stands up for the troops.
Q31	.78219	My platoon warrant is respected by platoon members.
Q32	.76254	In the event of combat I have confidence in my platoon warrant.
Q33	.49568	The Sr NCMs in my platoon stay with us in the field even when conditions are terrible.
Q34	.47566	The Sr NCMs in my platoon go to bat for their troops to get things they deserve.
Q35	.40395	The Sr NCMs trust the soldiers in this platoon.

Factor 5 - Professional Morale

Q45	.58811	I think I would perform better in battle than other members of my platoon.
Q46	.57858	I feel I am making a contribution to the Canada by serving in the army.
Q47	.55574	I am confident in my abilities as a soldier.

Table C-2 (Continued)

Item	Loadings	Question
Q48	.55344	I feel proud to be a soldier in the Canadian army.
Q49	.53039	I am better trained than the enemy soldier.
Q50	.49499	I feel the army has an important job to do in defending Canada.
<u>Factor 6 - Leadership III (Pl Comd)</u>		
Q36	.77604	My platoon commander is respected by platoon members.
Q37	.74062	In this platoon, my platoon commander stands up for the troops.
Q38	.69848	In the event of combat I have confidence in my platoon commander.
<u>Factor 7 - Leadership IV (Sect Comd)</u>		
Q39	.77549	My section commander stands up for his troops.
Q40	.73449	In the event of combat I have confidence in my section commander.
Q41	.71036	Section commanders in this platoon are respected by section members.
<u>Factor 8 - Leadership V (Coy Comd)</u>		
Q42	.76230	My company commander is respected by those under his command.
Q43	.75117	My company commander stands up for the troops.
Q44	.62734	In the event of combat I have confidence in the company commander.

Note. *Items requiring reverse scoring.

Table C-3
Morale and Cohesion Items
Pearson Correlation Coefficients

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	—																
2	.3870	—															
3	.3374	.4794	—														
4	.3635	.4452	.5426	—													
5	.4458	.4108	.4424	.6178	—												
6	.4266	.5481	.4563	.4929	.4417	—											
7	.4210	.3171	.3489	.4818	.5261	.3420	—										
8	.2938	.6301	.3654	.3561	.3403	.4023	.3029	—									
9	.3527	.3041	.4074	.3703	.3007	.3293	.3122	.2967	—								
10	.3762	.3689	.3244	.4348	.4758	.4064	.4331	.3196	.3874	—							
11	.4398	.3157	.3603	.4147	.4660	.3403	.4391	.2324	.2321	.4022	—						
12	.3038	.4091	.2882	.5369	.5678	.3845	.4407	.3443	.2148	.4181	.4065	—					
13	.1830	.3020	.4244	.3954	.4629	.2290	.3771	.2148	.1665	.3702	.3825	.2852	—				
14	.3323	.2944	.3693	.5128	.3887	.2691	.3269	.2366	.3337	.2769	.2570	.3904	.2435	—			
15	.2587	.4076	.4385	.4037	.3652	.3374	.4493	.3428	.4125	.3902	*.1986	.3162	.2838	.3986	—		
16	.2667	.3021	.2945	.2491	.2608	.3251	.2577	.2352	.3325	.1961	*.1707	*.1701	*.1049	.2215	.2780	—	
17	.3138	.2727	.3485	.4539	.3801	.3241	.3598	.2076	.3779	.4023	.2771	.2902	.2479	.2828	.3853	*.1871	—

Note. 1. Correlations are significant at the .001 level or greater.
2. *Denotes significance less than .001.
3. N = 199-206.

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NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
(ANSI and ISO TEST CHART No. 2)

Table C-4

Leadership Items
Pearson Correlation Coefficients

Items	18	19	20	21	22	23	24	25	26	27	28	29
18	—											
19	.5854	—										
20	-.6013	-.4354	—									
21	-.4888	-.3423	.6001	—								
22	-.5188	-.4436	.6325	.4993	—							
23	-.5434	-.3819	.5716	.3996	.5430	—						
24	.5725	.4550	-.3886	-.3391	-.4020	-.4034	—					
25	-.4725	-.3544	.4606	.4795	.5346	.4187	-.3385	—				
26	-.3959	-.3831	.4096	.4444	.3562	.3788	-.3262	.3741	—			
27	.4056	.3823	-.3063	-.2857	-.3563	-.3555	.6633	-.2213	-.2568	—		
28	.3701	.5536	-.3120	-.1126	-.3216	-.4397	.1808	-.1950	-.2889	.2156	—	
29	.3186	.5030	-.2052	-.3000	-.1771	-.2572	.2457	-.2058	-.3505	.2657	.3540	—

Note. 1. Correlations are significant at the .001 level or greater.

2. N = 199-206.

Table C-5

Leadership II Items
Pearson Correlation Coefficients

Items	30	31	32	33	34	35
30	—					
31	.7134	—				
32	.6530	.5834	—			
33	.3143	.2690	.2775	—		
34	.3412	.3305	.3271	.4746	—	
35	.3082	.3262	.3764	.2944	.4479	—

Note. 1. Correlations are significant at the .001 level or greater.
 2. N = 199-206.

Table C-6
Leadership III Items
Pearson Correlation Coefficients

Items	36	37	38
36	—		
37	.7597	—	
38	.7116	.6938	—

Note. 1. Correlations are significant at the .001 level or greater.
2. N = 199-206.

Table C-7
Leadership IV Items
Pearson Correlation Coefficients

Items	39	40	41
39	—		
40	.7210	—	
41	.7019	.6266	—

Note. 1. Correlations are significant at the .001 level or greater.
2. N = 199-206.

Table C-8
Leadership V Items
Pearson Correlation Coefficients

Items	42	43	44
42	—		
43	.6227	—	
44	.5461	.5860	—

Note. 1. Correlations are significant at the .001 level or greater.
2. N = 199-206.

Table C-9
Professional Morale Items
Pearson Correlation Coefficients

Items	45	46	47	48	49	50
45	—					
46	*.1755	—				
47	.3373	.2942	—			
48	*.1801	.6133	.3330	—		
49	*.1837	.3919	.4477	.4258	—	
50	*.0446	.4331	.3487	.2910	.2241	—

Note. 1. Correlations are significant at the .001 level or greater.

2. *Denotes significance less than .001.

3. N = 199-206.

Table C-10

Ideology I Items
Pearson Correlation Coefficients

Items	51	52	53	54	55	56
51	—					
52	.3395	—				
53	.3196	.6160	—			
54	-.4450	-.3074	-.2790	—		
55	-.2370	-.2446	-.3075	.4018	—	
56	-.2641	-.2917	-.2722	.4400	.5672	—

Note. 1. Correlations are significant at the .001 level or greater.

2. N = 199-206.

APPENDIX D

Frequency Distributions for Selected
Questionnaire Items

-98-
Table D-1

My Platoon is ready for combat

Value Label	Value	Percent	Cum Percent
strongly disagree	1	10.7	10.7
disagree	2	20.6	32.1
neither agree nor disagree	3	32.3	65.6
agree	4	30.5	97.2
strongly agree	5	2.7	100.0

Table D-2

It feels good to part of this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	7.2	7.2
disagree	2	8.1	15.4
neither agree nor disagree	3	18.4	33.9
agree	4	46.6	81.0
strongly agree	5	18.8	99.8

Table D-3

I am confident of the combat abilities
of soldiers in my platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	10.3	10.3
disagree	2	21.1	31.7
neither agree nor disagree	3	26.9	58.8
agree	4	35.4	94.6
strongly agree	5	5.4	100.0

-99-
Table D-4

My immediate supervisor encourages
soldiers to give their best efforts

Value Label	Value	Percent	Cum Percent
strongly disagree	1	4.5	4.5
disagree	2	5.4	10.1
neither agree nor disagree	3	14.3	24.8
agree	4	54.7	80.0
strongly agree	5	18.8	98.8

Table D-5

My immediate supervisor offers
new ideas for solving job-related
problems

Value Label	Value	Percent	Cum Percent
strongly disagree	1	2.7	2.7
disagree	2	3.6	6.5
neither agree nor disagree	3	9.0	15.7
agree	4	54.7	71.9
strongly agree	5	27.4	99.3

Table D-6

My immediate supervisor doesn't
pay attention to what I am saying

Value Label	Value	Percent	Cum Percent
strongly disagree	1	12.6	12.6
disagree	2	57.0	69.6
neither agree nor disagree	3	17.0	86.0
agree	4	7.6	93.6
strongly agree	5	3.6	99.8

-100-
Table D-7

In the event of combat I have
confidence in my platoon Warrant Officer

Value Label	Value	Percent	Cum Percent
strongly disagree	1	1.3	1.3
disagree	2	4.5	6.0
neither agree nor disagree	3	15.7	22.3
agree	4	41.7	65.6
strongly agree	5	33.2	98.8

Table D-8

The platoon Warrant stands up
for the soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	1.3	1.3
disagree	2	4.9	6.6
neither agree nor disagree	3	18.4	25.9
agree	4	38.6	66.5
strongly agree	5	31.8	98.3

Table D-9

The platoon Warrant is
respected by soldiers in
this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	1.3	1.3
disagree	2	3.6	5.2
neither agree nor disagree	3	18.4	24.4
agree	4	43.9	70.4
strongly agree	5	28.3	98.7

-101-
Table D-10

If combat I have confidence
in the Platoon Commander

Value Label	Value	Percent	Cum Percent
strongly disagree	1	16.6	16.6
disagree	2	15.7	34.0
neither agree nor disagree	3	25.1	60.4
agree	4	30.5	92.5
strongly agree	5	7.2	100.0

Table D-11

The Platoon Commander stands
up for soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	8.5	8.5
disagree	2	11.2	20.7
neither agree nor disagree	3	26.0	47.9
agree	4	35.9	85.4
strongly agree	5	13.9	99.3

Table D-12

The Platoon Commander is respected by
soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	11.2	11.2
disagree	2	17.9	30.7
neither agree nor disagree	3	22.4	54.2
agree	4	33.2	89.2
strongly agree	5	10.3	99.5

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Table D-13

In the event of combat I have
confidence in my Section Commander

Value Label	Value	Percent	Cum Percent
strongly disagree	1	3.6	3.6
disagree	2	7.2	12.0
neither agree nor disagree	3	16.1	30.0
agree	4	43.9	79.0
strongly agree	5	18.0	97.0

Table D-14

The Section Commander stands up for
soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	2.7	2.7
disagree	2	8.5	12.4
neither agree nor disagree	3	13.0	26.7
agree	4	40.4	71.3
strongly agree	5	26.0	97.3

Table D-15

Section Commander are respected
by soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	3.6	3.6
disagree	2	7.6	11.9
neither agree nor disagree	3	20.6	33.8
agree	4	43.9	80.5
strongly agree	5	18.4	98.9

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Table D-16

In the event of combat I have
confidence in the Company Commander

Value Label	Value	Percent	Cum Percent
strongly disagree	1	11.7	11.7
disagree	2	16.1	27.9
neither agree nor disagree	3	29.6	57.7
agree	4	35.0	92.8
strongly agree	5	7.2	100.0

Table D-17

The Company Commander stands up
for the soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	11.2	11.2
disagree	2	9.9	21.3
neither agree nor disagree	3	29.6	51.1
agree	4	34.5	86.0
strongly agree	5	13.9	99.9

Table D-18

The Company Commander is respected
by soldiers in this platoon

Value Label	Value	Percent	Cum Percent
strongly disagree	1	6.3	6.3
disagree	2	14.8	21.3
neither agree nor disagree	3	36.8	58.4
agree	4	35.4	94.1
strongly agree	5	5.8	99.9

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Table D-19

What a member does in their private life
should be no concern of their supervisor or commander

Value Label	Value	Percent	Cum Percent
strongly disagree	1	6.3	6.3
disagree	2	12.1	18.6
neither agree nor disagree	3	33.2	52.0
agree	4	30.0	82.4
strongly agree	5	17.5	99.9

Table D-20

Differences in rank are not important
after hours

Value Label	Value	Percent	Cum Percent
strongly disagree	1	4.9	4.9
disagree	2	19.3	24.4
neither agree nor disagree	3	17.5	42.1
agree	4	25.6	67.9
strongly agree	5	31.8	99.7

Table D-21

A soldier's private life is of
no concern to a commander

Value Label	Value	Percent	Cum Percent
strongly disagree	1	15.2	15.2
disagree	2	24.7	40.3
neither agree nor disagree	3	28.3	68.8
agree	4	22.4	91.4
strongly agree	5	8.5	99.9

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Table D-22

I am proud to be a soldier

Value Label	Value	Percent	Cum Percent
strongly disagree	1	4.9	4.9
disagree	2	2.2	7.2
neither agree nor disagree	3	9.4	16.7
agree	4	33.6	50.5
strongly agree	5	49.3	99.8

Table D-23

I am confident of my abilities as a soldier

Value Label	Value	Percent	Cum Percent
strongly disagree	1	2.2	2.2
disagree	2	3.1	5.4
neither agree nor disagree	3	10.3	15.8
agree	4	52.5	68.5
strongly agree	5	31.4	99.9

Table D-24

My job is important for defending Canada

Value Label	Value	Percent	Cum Percent
strongly disagree	1	3.6	3.6
disagree	2	3.6	7.4
neither agree nor disagree	3	13.9	21.7
agree	4	39.9	62.7
strongly agree	5	36.3	100.0

END

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FIN