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13. ABSTRACT *(Maximum 200 words)*

This report summarizes findings from five survey data collections carried out by the Walter Reed Army Institute of Research (WRAIR) between 1983 and 1986 for the purpose of evaluating the COHORT Company Replacement Model of the Unit Manning System (formerly the New Manning System). Units surveyed include COHORT combat arms companies from various points in their three-year life cycle and a set of traditional individual replacement (IRS) companies used as scientific controls, often from the same battalions. Number of COHORT companies analyzed ranges from six to nineteen depending on date of data collection. The analysis focuses on the measurement of human dimensions, and cohesion in particular. Across all data collections, results confirm the presence of higher horizontal cohesion in COHORT companies, but do not reveal other positive psychological outcomes unless the COHORT companies are net neutral or positive with respect to IRS controls on assessments of such dimensions as leadership, training, and weapons. The report also includes documentation on all the survey data sets and associated cohesion scales related to WRAIR's field evaluation of the various COHORT models implemented by the Army, including battalion rotation and the 7th Light Infantry.

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UNIT MANNING SYSTEM:
HUMAN DIMENSIONS FIELD EVALUATION
OF THE COHORT COMPANY REPLACEMENT MODEL

18 April 1994

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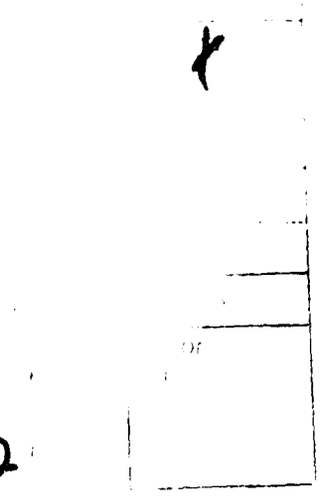

This report was revised and refined while the author was assigned as Research Psychologist at the U.S. Army Medical Research Unit-Europe in Heidelberg, Germany. The original version, dated May 1989, was written by Dr. Vaitkus while assigned at the Walter Reed Army Institute of Research in Washington, D.C. The Unit Manning System (UMS) research program was conceived and directed by Dr. David H. Marlowe, Ph.D., Chief, Department of Military Psychiatry, Walter Reed Army Institute of Research, Washington, DC 20307-5100.

EXECUTIVE SUMMARY

Background. This report is a reanalysis of data collected between 1983 and 1986 for the purpose of evaluating the COHORT Company Replacement Model of the Unit Manning System (formerly the New Manning System). The Unit Manning System (UMS) was a large scale attempt by the Department of the Army to enhance cohesion and esprit de corps by reducing personnel turbulence related to the Individual Replacement System (IRS) method of filling units. The UMS consisted of two subsystems: the COHORT Unit Replacement System and the U.S. Army Regimental System. The current report focuses only on the COHORT Unit Replacement System.

The COHORT (acronym for Cohesion, Operational Readiness, and Training) method of unit replacement involved forming and stabilizing combat arms companies and batteries for a three year unit life cycle. Enlistees recruited for a specific COHORT unit trained together as a group during Initial Entry Training (by way of One Station Unit Training), after which they were assigned together to a FORSCOM unit where they were joined by a cadre and continued training. When the unit deployed overseas for a long or short tour (after 18 or 24 months in CONUS respectively), it did so as an intact group. COHORT units disestablished and their personnel were reassigned 36 months following formation. Disestablishment normally took place overseas for deploying units (Department of the Army, 1984).

Four different models of the COHORT Unit Replacement System were implemented. The first two of these involved inserting COHORT companies into preexisting battalions both in CONUS and overseas (OCONUS) following deployment. The difference between the two was whether the COHORT company deployed for a long tour (18 months-Model 1) or short tour (12 months-Model 2). The third model was defined by the creation of COHORT battalions which, upon deployment, rotated with "sister" battalions whose personnel had been newly stabilized in Europe. The fourth model was also battalion-based, but did not involve rotation overseas. These latter battalions were part of the 7th Light Infantry formation and spent their 36 month life cycles at Fort Ord, California (except for one battalion that deployed to the Sinai Desert for six months of United Nations peacekeeping duty).

The Data and Study Design. From the time PROJECT COHORT began and the first COHORT units were formed in 1981, the Army Deputy Chief of Staff for Personnel directed that the Walter Reed Army Institute of Research (along with other agencies) collect field data in order to evaluate "human dimensions" outcomes in COHORT units. Under the executive direction of Dr. David H. Marlowe, WRAIR collected survey data measuring cohesion and other psychosocial variables in both COHORT and individual replacement "control" units between 1983 and 1988. The survey data collected

by WRAIR scientists is related to the first, third, and fourth COHORT models introduced above. The seven survey data sets resulting from this effort are described in Appendix A of this report. In addition, there is an eighth data set, collected by Lieutenant Colonel Terry Fullerton in a Ranger battalion in 1987, that was used to help establish norms for cohesion measures.

The current report only discusses survey data collected in Model 1 COHORT units, i.e. the company replacement model with a long tour in Europe, and their IRS controls. These data provide the first and most straightforward examination of COHORT units, and therefore justify the indepth treatment and reanalysis given here. In fact, most of the WRAIR measures of cohesion refer to the company (or battery) as the primary unit of analysis and suggest that the company is normally the largest military group in which cohesion, especially in terms of daily face-to-face interaction, occurs. For information and initial analyses of both the battalion and company COHORT models, the reader is directed to the WRAIR UMS Technical Reports (e.g., Marlowe, 1985, 1987).

WRAIR scientists in the Department of Military Psychiatry and the U.S. Army Medical Research Unit-Europe, as well as contracted agents of BDM Corporation, collected survey data from individual COHORT companies/batteries and their IRS controls between 1983 and 1986. All assigned members of the opportunistic samples of airborne infantry, mechanized infantry, armor, and field artillery units were asked to voluntarily complete a survey. With some exceptions, response rates by company/battery ranged from 60% to 80%, and nonrespondents usually were not available for duty (due to leave, sick call, etc.) on survey administration dates. No systematic underrepresentation of soldiers by demographic categories (e.g., rank, race, marital status) was found for these data collections.

The data analyses presented herein are broken down into three sections. The first section reports on the first generation of COHORT companies following their deployment to Europe in 1983. Data from ten COHORT line companies from ten different combat arms battalions are compared to IRS data <u>from the same battalions</u> (Data Set #1 in Appendix A). The second section reports on the second generation of COHORT companies following their deployment to Europe in 1984 (Data Set #2 in Appendix A). In that section, data from six COHORT line companies from six different combat arms battalions are compared to IRS data, again from the same battalions. Although there are fewer cases for the second generation comparisons, both of these data collections offer a strong scientific design that controls for type of unit, post, and battalion.

The third section of the report analyzes data from subsequent samples of COHORT companies and IRS controls collected at approximately six month intervals during 1985 and 1986 (part of Data Sets #3, #4, and #5 in Appendix A). Depending on the data set, the COHORT companies represent 10 to 19 battalions and the IRS companies from 6 to 9 battalions. It is not possible in these

analyses to control COHORT versus IRS comparisons by battalion. However, these analyses do permit separate examinations of the COHORT companies by different points in the unit life cycle (beginning, early to middle, middle to late, and end). They therefore also include COHORT data before deployment while the units were still in CONUS.

Significant Findings. The reader is directed to the "Conclusions" section that follows each of the three data analysis sections, as well as to the "Overall Conclusions" that begin on Page 59. These findings may be summarized as follows:

o COHORT companies in the company replacement model consistently display higher levels of horizontal cohesion (social bonding with fellow soldiers) than IRS control companies regardless of (1) stage in COHORT unit life cycle, (2) whether or not the IRS controls are from the same battalions as the COHORT companies, (3) whether looking at individual survey items or scale scores, and (4) whether the IRS control companies are higher, lower, or the same on other measures of cohesion (i.e., related to confidence in leadership, weapons, and training).

o There is no consistent difference between COHORT and IRS companies on any psychosocial measure except horizontal cohesion.

o The effect of COHORT status on horizontal cohesion appears larger when the COHORT sample happens to be net positive (and smaller when the COHORT sample happens to be net negative) with respect to the IRS sample on the other measures of cohesion (i.e., related to confidence in leadership, weapons, and training). This is because all the measures of cohesion are significantly correlated with one another, and thus the effect of COHORT on horizontal cohesion may be diminished or enhanced depending on these other aspects of unit climate.

o There is a decline in cohesion over the course of the COHORT unit life cycle, although the decline is less severe for horizontal cohesion than for other measures of cohesion.

o COHORT companies score higher than IRS companies on such outcome measures as willingness to go to war with the unit and company pride, but only when they are no worse than net neutral with respect to the IRS sample on the other measures of cohesion (i.e., related to confidence in leadership, weapons, and training).

o Cohesion levels are lower across the board in both COHORT and IRS companies when compared with those found in a Ranger battalion.

It must be kept in mind that these results apply only to first-term enlisted soldiers (E1 to E4) in combat arms companies and batteries. For the most part, COHORT privates, corporals, and specialists actually experienced personnel stabilization. Many of the results are generalizable to noncommissioned officers, but the

COHORT stabilization goal was realized only partially with NCO's and not at all with officers. Throughout the analyses, the evaluation of COHORT must be seen in the context of an Army program involving a minority of units that was instituted while the Individual Replacement System continued to be the norm.

Value of This Report. Beyond adding to the historical record on the Unit Manning System, which was a critical and costly Army personnel initiative of the 1980's, this report contributes the following, most of which has not been previously published:

o Documentation of all data sets related to Unit Manning System soldier surveys generated by the Walter Reed Army Institute of Research. This includes numbers of cases, descriptions of COHORT and IRS units surveyed, variable categories, and dates of data collection.

o Documentation of the primary cohesion and psychosocial scales used to evaluate the various COHORT models. This includes reliability and correlational analyses, in addition to (normative) mean scores and standard deviations, both at the individual and company level, for each data set.

o The use of different small samples of units over time that reveal clear patterns of consistency on the measure of horizontal cohesion (hypothesized to be related to COHORT status) while allowing great fluctuation on the other measures of cohesion (not hypothesized to be related to COHORT status). This design greatly assists the causative argument with respect to the specific effect of COHORT on cohesion, and validates the hypothesis that cohesion measures are somewhat independent of one another.

o Analyses that go beyond sample mean scores to show quantifiably at the paired-company level how a wide variety of contrasting unit climates can undermine or enhance the effect of a structural organizational change such as COHORT.

o Analyses that show in a simple way how psychosocial outcome measures are affected by multiple rather than single cohesion factors.

o Analyses that point to the importance of separating out a particular model of interest, at least at the beginning, when examining a program as large and complex as COHORT. For this report, this meant isolating the company replacement model dat from the battalion model data.

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First Round Deployment-General Results

Of the fourteen different company or battalion-based field models that were developed around the COHORT concept, only four were ever implemented. The first two of these involved the deployment of individual OSUT-trained companies OCONUS, and their insertion into preexisting battalions for the remainder of their 36 month life cycle. In USAREUR, this meant a COHORT "long tour" of 18 months (Model 1) and in Korea a "short" one of 12 months (Model 2). The Walter Reed data from individual COHORT companies found in Data Sets #1-5 include only Model 1 units and care must therefore be taken in generalizing to the entire company replacement method of COHORT implementation.

For ten of the first set of COHORT companies or batteries thus deployed to USAREUR, human dimension survey measures were taken once between two and six months following arrival in Europe. No survey data are available for these units prior to their USAREUR deployment. Data Set #1 contains data from the short survey instrument administered to the ten COHORT line units as well as to a set of IRS companies/batteries matched to the latter by battalion. For three mechanized infantry, three armor, and three infantry battalions, we can compare a COHORT line company with an IRS line company within the same battalion. In addition, for a COHORT airborne infantry line company, we can compare results to the remaining five IRS companies in its battalion, including the headquarters and support units. For all 10 COHORT line companies, therefore, we can compare survey results to at least one IRS line company in the same battalion, thus controlling for type of unit, post, and battalion command climate.

Since outcomes on social psychological variables are affected by a wide variety of causes, we ideally want to evaluate the effect of being a COHORT company, if any, with all such causal conditions held equal. This is impossible, of course, in the real world of social organizations, the military included. Being able to set controls down to the level of battalion command climate, however, is definitely a step in the right direction, even if such climate ultimately has different effects on the one COHORT company in the unit, e.g. because it is out-of-sync with the battalion training schedule, poses a drain on battalion resources due to the simultaneous arrival of a company's worth of personnel, or is otherwise perceived as demanding special attention as a result of the COHORT label. The paired company results are especially significant, then, since we can not exercise such control when it comes to comparing COHORT and IRS companies in the battalion rotation model.

The arrival, settling in, cohesiveness, and performance of the first COHORT units to be deployed to USAREUR have been documented in some detail in UMS Technical Report #1 (Marlowe, et al., 1985), including initial survey results. Our purpose here is to review and expand upon the survey results, and to do so in

light of a general framework for measuring cohesion that we will use throughout the report. The overall objective is to detect patterns among COHORT units with respect to cohesion, despite the many differences that may actually exist in their individual unit climates.

As conceived here, military cohesion is a multidimensional concept, whose dimensions are related but not the same as one another. Unit levels of soldier bonding, organizational pride, and confidence in leaders, training, and weapons certainly interact and overlap with one another to some extent, but possess some independent variation as well. When assessing the impact of some structural innovation like COHORT on cohesion, therefore, it is incorrect to assume that the new structure will have equivalent effects on all the dimensions of cohesion, or even that it will have a direct effect on some of the dimensions at all. Indeed it would be difficult to imagine any single personnel replacement strategy that would do so.

Regardless of what its founders may have intended with respect to the training and stabilization of officers and NCOs, the bottom line is that COHORT chiefly served to keep junior enlisted soldiers together in company-size groups from at least the time of their entry into a unit until they had served together in that same unit for three years. In addition, in the company replacement model, all the COHORT soldiers had gone through IET with their fellow company members via One Station Unit Training (OSUT). On this basis, we expect there to be some difference between COHORT and IRS companies on survey items that evaluate social relations among soldiers, but do not expect other than random chance differences with respect to items that concern, for example, soldier-leader relations, quality of training, confidence in weapons, or even confidence in self. There well may be some effect, however indirect, of COHORT on the latter phenomena, but we are not hypothesizing such effects at this time.

Aside from the Psychological General Well-Being scale, no scales were developed for Data Set #1 and this forces us to look at the individual items themselves. At the same time, we do not lose any of the information contained within the individual items caused by adding them within a scale, an activity that we will pursue soon enough for Data Set #3 and beyond. By selecting the items that appear in Table 1, we hope first to learn whether our prediction is correct that the first term enlisted members of COHORT companies reveal greater social solidarity among their fellow soldiers than their IRS counterparts. The question is framed in different ways, but it is clear that we are simply asking about general social bonding in the unit, not so much affect (e.g. liking each other or being fun to be with) as a sense of shared knowledge about who everyone else is, the common circumstances of their group existence, and their concern for one another's welfare. Compared to finding this relative lack of social indifference in COHORT companies, any other effects that we might run across between COHORT and IRS companies would truly be less understandable in terms of COHORT status alone.

It should quickly be apparent from Table 1 that in fact

soldiers from COHORT companies are more tightly bonded and therefore less alienated from one another than IRS soldiers from companies within the same battalions. For example, when asked whether "people in this company feel very close to each other," members of COHORT companies are significantly more likely to agree and agree strongly and less likely to disagree or disagree strongly than their IRS counterparts by nearly a full point on a five-point scale (3.38 vs. 2.43). Furthermore, the COHORT mean indicates a preponderance of positive responses since it is over the neutral ("don't know") point of 3.0, whereas the IRS mean informs us of a preponderance of negative responses (i.e., it is less than 3.0). We can find the actual proportions of these response types by looking at the percentage distribution of responses on the item:

P2 CLOSE	COHORT (N=404)	IRS (N=286)
Strongly Disagree	9%	25%
Disagree	17%	35%
Don't Know	19%	15%
Agree	38%	23%
Strongly Agree	17%	2%
Mean Score	3.38	2.43

Thus, the respective mean scores of 3.38 and 2.43 on Item P2 really mean that 55% of the COHORT junior enlisted soldiers agree or agree strongly that people in their company feel very close to each other compared with just 25% of IRS junior enlisted soldiers, and likewise that 60% of the IRS soldiers versus just 26% of COHORT soldiers disagree or disagree strongly with the statement.

Each of the remaining items in Table 1 tells a similar story with respect to the higher degree of social integration in COHORT units on the horizontal level hypothesized. A total of 70% of COHORT E1-E4s agree or strongly agree that they really know the people they work with very well in contrast to 49% of IRS E1-E4s (Means of 3.62 vs. 3.26). With respect to their closest friendships, 49% of IRS first-termers disagree or disagree strongly that these are the people with whom they work compared with 38% of COHORT first-termers (Means of 2.92 vs. 3.20). Similarly, COHORT soldiers are more likely than IRS soldiers to agree that their after-duty hours are spent with fellow members of their company (Means of 3.35 vs. 3.18). Finally, nearly double the proportion of COHORT to IRS soldiers strongly agree or agree that people in their company really look out for each other (40% vs. 22%, Means of 2.90 vs. 2.46). All of these differences in levels of horizontal bonding are statistically significant, and in the hypothesized direction favoring COHORT units.

The results in Table 1 are noteworthy for a number of reasons, most importantly because the samples were drawn from within the same battalions and represent equal numbers of

mechanized infantry, armor, and field artillery units (three battalions each).[1] Furthermore, it must be kept in mind that these COHORT soldiers were more than half-way through their unit life cycle (20-24 months in company) when we would have expected the initial "high" coming from OSUT training, along with any naive hopes or simple benefit of the doubt they might have carried into the new unit, to have waned considerably. In fact, as our later analyses will show, the deterioration of positive attitudes toward the unit is a common phenomenon among first-term soldiers, beginning within a couple months following IET and continuing almost unabated with each successive month in company.

In both COHORT and IRS units, and on practically all of our measures including horizontal cohesion, we find that soldiers are the least positive about their units with the achievement of the E-4 grade, especially when occurring with less than a year before the ETS date. In the Data Set #1 samples of mechanized infantry, armor, and field artillery E1-E4s, the COHORT sample is made up of 4% E1s, 9% E2s, 19% E3s, and 69% E4s compared with 4% E1s, 23% E2s, 33% E3s, and 40% E4s in the IRS sample. Thus, the COHORT effect on horizontal bonding demonstrated in Table 1 should be considered a conservative estimate of the true effect under the condition of equivalent grade distribution.

While one could argue that on some ideal or absolute scale an item mean of less than 4.0 is still not "all that high," it is difficult to deny that relative to the IRS members of these nine battalions, the COHORT members, many more of whom were within one year of getting out of the Army, exhibited markedly reduced levels of soldier-to-soldier alienation within their companies and batteries. A more serious doubt might be that the COHORT effects are due solely to the COHORT label, of feeling and being made to feel special or different within a largely nonCOHORT Army, rather than the actual social structural or group experience of the COHORT life cycle itself. This labeling theory seems all the more plausible when we recall the difficult welcome these first round COHORT units received following deployment (as documented in Technical Report #1 (Marlowe, et al., 1985)).

If soldiers in COHORT units were responding to the questionnaire based solely on possessing the COHORT label or were defensively reacting to all outsiders' questioning regarding their units' integrity, we would expect to find a COHORT effect on many more than just the horizontal bonding items. From an examination of Table 2, this does not appear to be the case. The collection of items presented in this table represent dimensions of unit cohesion that are not strictly horizontal, and on which differences would not necessarily have been linked with the structural implementation of COHORT per se. In other words, the differences might exist, but we were not predicting them.

[1]The airborne infantry battalion soldiers were not included in the analyses in this section because there are five IRS companies and just one COHORT company within the sample. The analysis of this battalion is deferred to the paired company results section that follows.

TABLE 1

SURVEY ITEMS WHERE COHORT IS HYPOTHESIZED TO HAVE AN EFFECT

First Round Post-Deployment COHORT Companies vs. Same Battalion IRS Companies

Mechanized Infantry, Armor, Field Artillery (3 BNS Each, Line Companies)

T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
P2	People in this company feel very close to each other.	3.38	2.43	10.3*
P7	I really know the people I work with very well.	3.62	3.26	5.7*
P9	I spend my after duty hours with other people in this company.	3.35	3.18	1.7*
P10	My closest friendships are with the people I work with.	3.20	2.92	2.6*
P29	People really look out for each other in my company.	2.90	2.46	4.8*
N		404-406	283-287	
N(Companies/Batteries)		9	9	

*Statistically Significant Difference at P<.05, One-Tailed Test

Item Response Codes:
1=Strongly Disagree 2=Disagree 3=Don't Know 4=Agree 5=Strongly Agree

TABLE 2

SURVEY ITEMS WHERE COHORT IS NOT HYPOTHESIZED TO HAVE AN EFFECT

First Round Post-Deployment COHORT Companies vs. Same Battalion IRS Companies

Mechanized Infantry, Armor, Field Artillery (3 BNS Each, Line Companies)

T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
P3	The officers in this company really seem to know their stuff.	2.70	2.76	-.6
P6	The NCOs in this company really seem to know their stuff.	2.92	2.76	1.8
P18	I have real confidence in our weapons and our ability to use them.	3.36	3.30	.5
P19	I think the level of training in this company is very high.	3.26	2.79	4.9*
P20	If I have to go into combat I have great confidence in my personal skills and training.	3.83	3.95	-1.6
P24	My superiors make a real attempt to know me and treat me as a person.	2.37	2.35	.2
P31	The officers and NCOs in this company would do well in combat.	2.79	2.74	.5
N		401-405	284-287	
N(Companies/Batteries)		9	9	

*Statistically Significant Difference at P<.05, Two-Tailed Test

Item Response Codes:
1=Strongly Disagree 2=Disagree 3=Don't Know 4=Agree 5=Strongly Agree

We note in Table 2 that some of the COHORT means are higher and some lower than the IRS means on items concerning confidence in officers, confidence in NCOs, confidence in weapons, level of training, confidence in self, and caring leadership. None of the seven differences in means, however, are statistically significant with the exception of that on the perceived level of training (P19). By a margin of 14%, COHORT soldiers are significantly more likely than IRS soldiers to agree or strongly agree that the training level in their company is very high (53% vs. 39%, Means of 3.26 vs. 2.79). While the latter was not hypothesized, it does comport with battalion commanders' assessments (as reported in Technical Report #1) of their COHORT companies as outstanding in the areas of maneuverability and unit movement, despite the latter's relative ignorance of "the way we do things here in USAREUR."

The finding on P19 notwithstanding, Table 2 leads us to the conclusion that there is little reason to believe that COHORT in and of itself alters perceptions of unit climate beyond those having to do with horizontal social relations. Indeed, in both COHORT and IRS units, the highest item means are found on the confidence in personal skills and training item (P20, Means of 3.83 and 3.95), where approximately 76% of all E1-E4s chose positive responses. Similarly, there is practically no numerical mean difference between COHORT and IRS troops in their judgment of whether superiors make a real attempt to know them and treat them like persons (P24), and it is here where we find the lowest item means (2.37 and 2.35). Over 61% of all E1-E4s in both types of units disagreed, and more than half of these strongly so, that their superiors make such an attempt.

Whether we speak of "unit cohesion" (Henderson, 1985; Johns, 1984), "unit morale" (Gal, 1986), "combat motivation" (Kellett, 1982), or "combat readiness and effectiveness" (Sarkesian, 1980), it is clear that horizontal social bonding is a critical component within each. It is equally clear that the positive effects of such horizontal bonding, in terms of personnel sustainment on the battlefield or combat victory, are not fully realizable without many other components in place, including logistical support, firepower, technology, training, equipment condition, strategy, command-control-communication, conflict credibility or national will, and small-unit leadership. As Table 2 points out, COHORT is far from an all-purpose magical pill with respect to at least some aspects of the latter. On the other hand, these other conditions do not appear appreciably worse in these COHORT companies, and may, in the case of training, even be somewhat better than in the same-battalion IRS companies. This being the case, we would expect some positive outcome resulting from the higher horizontal social bonding found in COHORT units.

While we do not have quantifiable behavioral data, the social psychological benefits of greater horizontal bonding in COHORT companies, when scores on other measures of cohesion are at least equal to those in IRS companies, are plainly seen in Table 3. Members of the COHORT companies are significantly more likely than their fellow IRS soldiers to agree that their company

TABLE 3
OUTCOME MEASURES
First Round Post-Deployment COHORT Companies vs. Same Battalion IRS Companies
Mechanized Infantry, Armor, Field Artillery (3 BNS Each, Line Companies)
T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
P1	This company is one of the best in the U.S. Army.	3.00	2.47	5.4*
P4	I think this company would do a better job in combat than most other Army units.	3.37	2.70	7.5*
P13	If I have to go to war the men I regularly work with are the ones I want with me.	3.33	3.05	2.9*
P25	I believe that the people in my company will stand by me in any difficult situation.	2.90	2.54	3.8*
S14	If we went to war tomorrow, would you feel confident going with this squad or would you rather go with another?	2.28	2.08	3.3*
GWB	Psychological General Well-Being Scale Score	59.4	60.6	-.8
N		390-406	274-287	
N(Companies/Batteries)		9	9	

*Statistically Significant Difference at P<.05, Two-Tailed Test

Item Response Codes (Except S14 and GWB):
1=Strongly Disagree 2=Disagree 3=Don't Know 4=Agree 5=Strongly Agree

S14: 1=Other Unit 2=Do Not Know 3=Wouldn't Change

GWB: Scores Range from 0-110

is one of the best in the Army, would do a better job in combat, and that the people within their company would stand by them in any difficult situation. While less than half (39%) of COHORT soldiers agreed that their company was one of the best (P1), this compares with just 22% in the IRS companies. Moreover, in both COHORT and IRS companies, 34% said they "did not know" if their company would do a better job in combat than most other Army units (P4), but only 18% of the COHORT E1-E4s disagreed with the statement compared with 39% of the IRS E1-E4s, a higher than two-to-one ratio. The differences are not as great when it comes to trusting that fellow company members will stand by them in difficult situations (P25), but negative responses are reduced to 36% in COHORT companies from the 51% in IRS companies.

At the level of the squad or work group, significant differences were also found between COHORT and IRS soldiers on important social psychological outcomes of direct relevance to small-unit combat readiness. By a margin of 10%, the junior enlisted in COHORT units are more likely to agree or agree strongly that they would want to go to war with the men they regularly work with (53% to 43%, P13). Similarly, 29% of IRS first-termers said they would rather go to war with some squad other than their own (S14), compared with just 16% of COHORT first-termers. All of these findings confirm and reinforce the notion that there is a combat readiness payoff in COHORT units with their higher levels of horizontal bonding, at least when values on other unit climate measures are no worse than those for the IRS units. We would certainly hypothesize even larger differences on these outcome measures when caring leadership, confidence in weapons, and confidence in NCOs and officers rise above the comparative or control norm.

The finding of no significant difference on the Psychological General Well-Being Scale (GWB) is not as difficult to understand when we consider what this scale is measuring, namely the individual soldier's current state of health, energy, emotional stability, and happiness (Dupuy, 1984). While we would not suggest that this overall measure of the individual's vitality, relative state of depression, and anxiety level is unrelated to social psychological conditions in the unit, including the level of horizontal bonding, we would maintain that for the most part it is not a group-level measure, and that its relatively large individual-level variation (and small group-level standard deviation) is mainly the result of assessments of oneself and less due to perceptions of social interactions within the unit. If, for example, we had found a significant difference between COHORT and IRS company members on confidence in personal skills and training (P20), we would have had a better basis for hypothesizing a difference on GWB. We do not rule out the possibility, however, that under extremely negative conditions within the unit, GWB will suffer accordingly.

The general findings for COHORT vs. IRS unit members hold up fairly well among NCOs as well. COHORT NCOs (E5-E8, N=145) score significantly higher than IRS NCOs (N=133) from the same nine battalions on horizontal bonding items P2, P7, and P29 and outcome measures P1, P4, and P13. With respect to other

[illegible] COHORT NCOs are like their junior enlisted in being more likely to agree to the quality of training item (P19) than their IRS counterparts of similar rank. In addition, they are more likely than the latter to agree that the NCOs in the company know their stuff (P6) and would do well along with their officers in combat (P31). Given the relatively lower turnover of this group of NCO cadre in COHORT units, we would make much the same argument that we do for the E1-E4s to account for these findings on relative horizontal cohesion within the company.

We must reemphasize in concluding this section that the higher level of horizontal bonding that we posit for COHORT companies is based on the relative degree of knowing one's fellow unit members well and having a shared history of face-to-face interaction rather than "liking each other." There is nothing about the COHORT structure implementation that would have ensured the latter. In fact, there is no significant difference between COHORT and IRS soldier responses to the survey item, "How do you like the guys in your squad?" (S2). Seventy-two percent of both groups, for example, report "they're okay." These roughly equal levels of liking or simple affect do not translate into the same percentages, as we have seen, on items measuring closeness, friendships within the work group, or knowing one another well. They are these latter phenomena, we argue, that contribute to confidence in the unit and the ability to count on and depend upon one another in combat.

The one general finding that appears anomalous at first glance in Data Set #1 occurs on Item S8 which asks E1-E4s whether there is "anyone in your squad you might lend money in an emergency" on a three-point scale. A score of "3" means "yes" and IRS soldiers score significantly higher than COHORT soldiers on the item (2.73 vs. 2.60, t=-2.9, p<.05 (two-tailed), df=679). The potential danger in simply using means to draw conclusions is illustrated by examining the actual response distributions:

S8 LEND MONEY	COHORT (N=399)	IRS (N=282)
No	4.0%	5.3%
It all depends	31.6%	16.3%
Yes	64.4%	78.4%
Mean Score	2.60	2.73

As we can see from the above, there really is no difference on the response of "no," and rather what we have are the COHORT soldiers more likely to choose the "it all depends" category instead of the unqualified "yes" category. To make the ordinal inference that this choice means that this group of respondents is less tightly bound or caring with respect to their fellow squad members, without additional information from all the respondents about what they mean by "it all depends," would seem to be unsound at best. In light of the other empirical data we

have from this COHORT group, we might well come to just the opposite conclusion about what the choice of this response category indicates about the concern squad members have for one another in "emergency" situations. A better question, perhaps, might have addressed actual or potential behavior under a more specific set of circumstances.

First Round Deployment-Paired Company Comparisons

In Table 4, we present the battalion by battalion results for the items we examined in Tables 1-3 for the COHORT vs. the IRS company or companies in each[1] Results from nine battalions are given instead of ten because of the low number of junior enlisted respondents (N=8) in the IRS control company in the third artillery battalion, thus producing unreliable means for this company. The COHORT company in that third field artillery battalion, however, compares favorably on its horizontal cohesion item means to the other two COHORT artillery companies. We should also note that the comparisons between the airborne infantry COHORT company and the remaining 5 IRS companies in its battalion could equally be made between the COHORT company and any one of the five companies, including the headquarters and support companies. For example, on P7, 79% of the junior enlisted COHORT company members agree or agree strongly that they really know the people they work with very well, compared with 60% in IRS company #1, 64% in IRS company #2, 62% in IRS company #3, 59% in IRS company #4, and 65% in IRS company #5, for an average difference between the airborne COHORT company and an IRS company in its battalion of 17% and a range of 14% to 20%.

With respect to Table 4 as a whole, it must be pointed out that the price of being able to compare just two companies or batteries within a battalion is a reduction in the number of cases under consideration, which means that differences in percentages or means must be numerically greater than for the sample as a whole in order to achieve statistical significance. For example, while the vast majority of all of the mean differences for the hypothesized COHORT effects run in the predicted direction (40 of 45), there are a fair number of zeroes in the first five rows of item by item results, indicating no statistically significant differences. Generally speaking, mean differences on the five point scales must now be in the .4 to .5 range instead of the .2 to .3 range in order to be statistically significant, with the widest margins (.5-.6) demanded for the

[1]The reasons for these analyses should be clear. In addition to the persuasive methodological control they provide, their unit of analysis is obviously the company or battery itself. Since COHORT is not a quality that inheres in the individual and we operationally deploy COHORT units and not COHORT individuals, it is critical that we examine the data on a unit basis when possible. A COHORT soldier without at least one of his fellow unit members is certainly not better off than any other soldier with respect to horizontal cohesion.

TABLE 4
PAIRED COMPANY COMPARISONS
COHORT VS. IRS LINE COMPANIES IN THE SAME BATTALION
First Round Post-Deployment COHORT Companies vs. Same Battalion IRS Companies
T-Tests for E1-E4s

CODE	MECH1	MECH2	MECH3	ARMOR1	ARMOR2	ARMOR3	ARTY1	ARTY2	AIR1
P2	+	+	+	+	+	+	+	0	+
P7	+	+	0	+	+	0	0	+	+
P9	+	0	0	0	0	+	0	0	+
P10	+	+	+	0	0	0	0	0	+
P29	+	+	0	0	0	0	0	0	+
(Hypothesized COHORT Effect Measures, One-Tailed Tests)									
P3	-	0	0	-	0	0	+	0	+
P6	0	0	0	0	0	+	+	0	+
P18	0	0	0	0	0	+	+	-	-
P19	+	+	0	0	0	+	+	0	0
P20	0	0	0	0	0	0	0	0	-
P24	0	+	0	-	0	0	0	0	0
P31	0	0	+	-	0	+	+	0	0
(Other Unit Climate Measures, Two-Tailed Tests)									
P1	+	+	0	0	0	+	+	0	0
P4	+	+	+	0	+	+	+	0	0
P13	+	+	+	0	0	+	0	0	+
P25	+	+	0	0	0	0	0	0	+
S14	+	+	0	0	0	+	0	0	+
GWB	0	0	0	-	0	0	0	0	0
(Outcome Measures, Two-Tailed Tests)									
N RANGE (COHORT/IRS):									
Low	56/52	61/44	46/47	37/17	29/14	31/27	33/24	47/37	101/359
High	60/55	66/48	47/50	39/19	30/16	33/28	35/25	48/38	108/378

KEY
CODE See Tables 1-3 for Item Code Translations
+ Statistically Significant Difference (P<.05), COHORT Score Higher
- Statistically Significant Difference (P<.05), COHORT Score Lower
0 No Statistically Significant Difference

MECH1=Mechanized Infantry Battalion #1
ARMOR1=Armor Battalion #1
ARTY1=Field Artillery Battalion #1
AIR1=Airborne Infantry Battalion #1

N.B. All comparisons are between two individual companies in the battalion, except for the Airborne Infantry battalion, where comparisons are between the COHORT company and the remaining 5 IRS companies in the battalion.

armor company comparisons (average number of cases per company less than 30). However, with the exception of GWB, we are not testing overall scale scores here and thus the result of any one test of statistical significance is less important than the general pattern of results.

With respect to the hypothesized COHORT effects on the horizontal bonding items (top five rows of results), that pattern tells us first that there was not a single instance where the IRS company had a statistically higher mean on such an item in the 45 tests conducted. Secondly, each of the nine battalions yielded a statistically significant item mean difference in the predicted direction on at least one of the five horizontal cohesion measures, with an average of 2.67 significant results per battalion. Third, COHORT companies in the mechanized and airborne infantry battalions showed the highest average number of significant horizontal bonding differences with their IRS controls (4.0), followed by the three armor battalions (2.0), and the two artillery battalions (1.0). This may be as much due to the larger number of cases in the infantry battalions as to any interactive effects between COHORT and battalion type.[1] Fourth, the horizontal bonding item that successfully discriminated individual COHORT companies from same battalion IRS companies most often was the "feel very close to each other" item (P2, 8 out of 9 times), followed by the "know the people I work with very well" item (P7, 6 out of 9 times), the "closest friendships" item (P10, 4 out of 9 times), and lastly the "after-duty hours" item and "look out for each other" item (P9 and P29, 3 out of 9 times each). We conclude from these observations that the COHORT effect on horizontal social bonding at the company or battery level is generalizable across battalions and across battalion types.

As we would expect, there is quite a bit more variety with respect to the by-battalion results on the other measures of unit climate (middle seven rows of results in Table 4). In three battalions (MECH2, MECH3, and ARMOR2), where there are all or mostly zeroes, the unit climate aside from horizontal bonding appears to be roughly equivalent between the COHORT and IRS companies, or slightly better for the COHORT company. In two battalions, ARMOR3 and ARTY1, those climates appear to be substantially more positive for the COHORT companies (mostly pluses), and in two others (ARMOR1 and ARTY2) slightly to substantially worse (mix of minuses and zeroes). In the remaining two battalions, MECH1 and AIR1, there is some combination of pluses, minuses, and zeroes signalling unit climates that are worse in some areas and better in others between the two company types.

We observe as anticipated that where the COHORT unit climates described in the previous paragraph are equivalent or better compared to those of the IRS control companies, there is

[1]This is certainly true in the case of the three armor battalions, where all differences run well in the predicted direction.

at least one significantly positive outcome (bottom six rows of results) for the COHORT vs. IRS company in the battalion. We are able to find positive outcomes even for MECH1 and AIR1, where there are significant negative and positive differences between the company types on the other measures of unit climate. Thus, for seven of the nine battalions, there are an average of 3.14 statistically significant positive outcomes for the COHORT member of the company pair, with a range of 1 to 5. In these seven battalions, the most common positive outcome difference for the COHORT company was on P4 (this company would do a better job in combat) in 6 of the 7 cases, and on P13 (the men I regularly work with are the ones I want with me in war) in 5 cases. Only once in the 54 tests conducted did an IRS company score higher than its COHORT counterpart on an outcome measure, namely on GWB in ARMOR1, one of the two battalions where the COHORT company proved to have a unit climate (apart from the horizontal dimension) that was at least partially negative and never positive compared with the IRS company.

With respect to specific battalion results, a few are especially instructive. In MECH2, 41 of 48 respondents (85%) in the IRS company disagreed or strongly disagreed (29 of the 41) that their superiors make an attempt to know and treat them like persons (P24) compared to 65% of the COHORT company members. The IRS company members further report that their platoon sergeants never or hardly ever talk personally with them (64% agreement), and neither do their platoon leaders (73% agreement) or the company commander (93% agreement). These percentages compare respectively with 30%, 48%, and 73% in the COHORT unit. The problems for the IRS unit on the vertical plane are compounded on the horizontal by the fact that 38% of the unit members disagree that black and white soldiers in the company mix after duty, in contrast to just 13% of the COHORT unit members. All of these differences, in tandem with the perception of poorer training and lower horizontal bonding overall among these IRS unit members, helps us understand their excessively low performance on the five social psychological outcomes. The P1 indicator, for example, shows that just 4% of them (2 soldiers) agreed that their company was one of the best in the Army, compared with 48% in the COHORT company.

The situation is reversed on caring leadership in ARMOR1, with 26 of 39 (67%) of junior enlisted in the COHORT company strongly disagreeing that superiors attempt to know and treat them like persons (P24), compared with 3 of 19 (16%) in the IRS company. We note too that 54% of the junior enlisted in the COHORT unit say that their platoon sergeants never or hardly ever talk to them personally versus 17% in the IRS unit. Furthermore, the COHORT soldiers are less likely than the IRS soldiers to agree that they can go to someone in the chain-of-command with a personal problem, and just three COHORT soldiers (8%) agree that they enjoy being members of their company compared with 42% in the IRS unit. All of this, combined with the fact that the COHORT soldiers are also significantly less likely than the control group to agree that their officers know their stuff, leads us not to expect positive social psychological outcomes for

this COHORT company. Nevertheless, it is observed that the IRS company is unable to capitalize on this state of affairs to produce social psychological outcomes in its favor. We would attribute this to the higher horizontal bonding that still resides in the COHORT company. Here is an example, however, of vertical unit climate being extremely negative enough for the Psychological General Well-Being of the soldiers affected to take a nosedive. The GWB score of the COHORT soldiers was 47.3 (compared to 65.5 in the IRS company and about 60 sample-wide), indicating severe levels of anxiety, distress, and lack of control.[1]

Over in MECH1, the fact that 60% of COHORT company members disagreed that their officers knew their stuff (P3), compared with 33% in the IRS company, apparently did not harm the positive aspects of the unit, including higher horizontal bonding and a sense of better training, in producing superior social psychological benefits. Likewise in AIR1, the relative doubts in the COHORT company about weapons and personal skills (P18 and P20), did not prevent these soldiers from being more likely than their IRS controls to want to go to war with their squad (S14) or with the men with whom they regularly worked (P13). Furthermore, 61% of them felt they could depend on fellow company members to stand by them in any difficult situation compared with 44% of the members of the IRS companies. All of the airborne companies, however, scored fairly similarly when it came to their agreement on being one of the best companies (P1) and doing well in combat (P4) with percentages averaging 52-62% in the agree and strongly agree categories.

The failure for any significant differences to materialize on squad or platoon-related items in ARTY1 and ARTY2 may well be related to the fact that artillery batteries are not organized on this basis, but there is more than that going on for ARTY2. Not only are the COHORT battery first-termers there less likely than the IRS first-termers to agree that they have confidence in their weapons and their ability to use them (P18, 55% to 74%), but they are less likely to agree that they like the work they do (43% to 62%) and that the job their battery does is one of the most important in the Army (44% to 74%). Furthermore, we find that 65% of COHORT battery members disagree that black and white soldiers mix after duty versus just 21% in the IRS battery. This apparently has created a lack of trust in the COHORT unit, despite the fact that they agree that they know one another better (P7) compared with the IRS battery members. Doubtless as a result, there is no heightened perception of closeness in the COHORT battery (P2).

Although there are not significantly worse problems in leadership noted from the soldiers' point of view between these two ARTY batteries, the issues spelled out above with respect to relative racial unease and soldiers' belief in their work are clearly leadership problems. Again it must be emphasized that

[1]The correlation between P24 and GWB in this data set is .42 ($N=662$, $p<.05$).

COHORT merely sets the stage structurally for horizontal cohesion and the potential for positive unit climate overall. It is up to leaders to seize the opportunity to nurture and guide the bonds formed by soldiers along constructive avenues. It is absurd to believe that COHORT is a substitute for leadership practices that reduce racial divisions or foster soldier motivation.

First Round Deployment-Conclusions

By systematically sorting out survey items where we expected a COHORT effect from those where no effect was anticipated, and then both sets of items from social psychological outcomes that we believe to be affected to some degree by them all, we have made a convincing case for the general relationship between COHORT and horizontal cohesion. Furthermore, the positive effect of the COHORT structure on horizontal cohesion among junior enlisted soldiers, as realized within the company replacement model, is generalizable across combat arms battalions and battalion types. There remains great variability between any two COHORT and IRS units on other measures of unit climate not strictly linked to horizontal bonding, but little difference over all units. When making comparisons between a COHORT and IRS unit, provided there are no significant net negative differences between the two units on these other measures of unit climate, the higher horizontal bonding in the COHORT unit promotes significant social psychological outcomes in its favor. Chief among these social psychological benefits are the perception that the unit will do a better job in combat than other units, and agreement that the men with whom the soldier regularly works are those that he wants with him in war.

While it would be unwise to generalize too strongly from a total of ten COHORT companies/batteries when we are uncertain of how representative they are of all COHORT companies/batteries, it is the consistency of results across multiple measures of horizontal cohesion, despite different battalion types and variation on other measures of cohesion, that is impressive. Any one mean value on a measure might well be the result of random chance, but it is more difficult to dismiss the kind of reinforcing pattern we have seen here with respect to higher relative values on horizontal cohesion measures which, when combined with other relatively neutral or positive unit climate conditions, produce significant differences on social psychological outcomes. The complete absence of a case where an IRS unit scored significantly higher than the COHORT unit in its battalion on any horizontal cohesion measure, or subsequently on a social psychological outcome, and the great number of cases where that it is precisely what the COHORT unit did vis-a-vis the IRS unit, gives logical credence to our conclusions.

Military units are social organizations. As such, they are organic systems whose behavioral activity or social psychological state is the result of a complex of factors and shared assumptions about the way things exist and operate in the unit. These factors and assumptions can be said to comprise the unit's

"organizational culture" (Schein, 1985). We have made considerable progress here in laying out at least some of these cultural elements, for example the degree of horizontal bonding, caring leadership, and confidence in weapons and training. That these elements may be complexly or organically related to social psychological outcomes is suggested when we note that Items P2 (closeness), P18 (confidence in weapons), P19 (confidence in training), P24 (caring leadership), and P31 (confidence in leaders) are correlated .46, .42, .46, .32, and .47 respectively with agreement about the unit's ability to do well in combat (P4).[1] We will hold off modelling these relationships, i.e. finding out which factors are most important for which outcomes controlling for the remaining factors, until we have a larger sample of units to analyze. Suffice it to say for the time being that we seem to have found in the implementation of the COHORT structure an opportunity for higher horizontal bonding that most assuredly has some independent influence on social psychological outcomes of direct military value.

[1]The correlations are .39 (P2), .35 (P18), .35 (P19), .30 (P24), and .35 (P31) with wanting to go to war with the men you regularly work with (P13). All correlations are statistically significant at $p<.05$, N=687-690.

Second Round Deployment-General Results

UMS Technical Report #1 (Marlowe, et al., 1985) is helpful once again in giving us some idea of the social reality faced by this second group of COHORT companies and batteries to be deployed to USAREUR. Having arrived in USAREUR following disestablishment of the first round COHORT units, the novelty of COHORT had substantially worn off. Furthermore, the hostility levelled toward COHORT soldiers by their fellow battalion members had also decreased discernibly. Still, the perception persisted that COHORT units unfairly received special treatment when it came to just about every aspect of getting settled, from favorable positions on housing lists to command sponsorship to having their hands held through finance and the post bank. The reality was that, with the diminishing of COHORT's high profile limelight, the second round COHORT soldiers experienced a reduction in such privileges and attention known to their predecessors. In fact, the only "special" things about the treatment most of these COHORT soldiers reported receiving were more details and longer working hours compared to other companies in their battalions. They began to perceive that, all things considered, the "pros" of life as a COHORT soldier were outweighed by the "cons."

Despite what we will continue to unveil as a very different set of unit climates for this group of COHORT units compared with the last, the questions that we will ask of these units regarding cohesion and the approach we will take in answering them will be the same. Data Set #2 contains survey data from six different USAREUR battalions: two mechanized infantry, two armor, and two field artillery. As in Data Set #1, we can compare data from one IRS company/battery to that of the COHORT company/battery for each of the six battalions, for a total sample of twelve company-size line units. Once again, therefore, we are controlling for type of unit, post, and battalion command climate in making comparisons of COHORT and IRS units. With respect to the COHORT sample, the survey took place at roughly the same point in the unit life cycle as it did for the first round units, i.e. 20 to 24 months following formation.

The hypothesis tested in Table 1 that horizontal bonding is higher in COHORT units is the same one that we test again in Table 5 for the second round post-deployment units.[1] For four out of the five item indicators of horizontal bonding, we are able to reject the null hypothesis that there is no significant difference between the COHORT and IRS units, and conclude that in

[1]Item wording, numbering, and response categories changed between the Data Set #1 survey and the Data Set #2 survey. Hypotheses are therefore tested using items that most closely resemble those selected for the first round of unit analyses. Care must be taken, however, not to confuse item numbers from Tables 1-4 with those from Tables 5-11. Items listed in Appendix B are identical with respect to wording and numbering beginning with Data Set #3 (i.e. Data Sets #3 through #8).

TABLE 5

SURVEY ITEMS WHERE COHORT IS HYPOTHESIZED TO HAVE AN EFFECT

Second Round Post-Deployment COHORT Companies v. Same Battalion IRS Companies

Mechanized Infantry, Armor, Field Artillery (2 BNS Each, Line Companies)

T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
P2	People in this company feel very close to each other.	3.07	2.66	3.6*
P7	I really know the people I work with very well.	3.55	3.25	2.7*
P9	I spend my after-duty hours with other people in this company.	3.27	2.98	2.3*
P10	My closest friendships are with the people I work with.	3.35	3.09	2.0*
P31	In this company, people really look out for each other.	2.74	2.73	.2
N		267-269	170-173	
N(Companies/Batteries)		6	6	

*Statistically Significant Difference at P<.05, One-Tailed Test

Item Response Codes:
1=Strongly Disagree 2=Disagree 3=Can't Say I Agree or Disagree 4=Agree
5=Strongly Agree

fact the bonding is higher in the COHORT units. The junior enlisted in the COHORT units are more likely than IRS soldiers to agree or strongly agree that people in the company feel very close to each other, 40 to 24 percent (P2). They are also more likely to strongly agree that they know the people they work with very well, 22 to 9 percent (P7). The COHORT first-termers are furthermore less likely than their IRS counterparts in the same battalions to disagree or strongly disagree that they spend their after-duty hours with fellow company members, 28 to 39 percent (P9). They finally are more likely to agree or strongly agree that their closest friendships are with the people with whom they work, 53 to 44 percent (P10). While the magnitude of these percentage differences, as well as those of the means in Table 5, is less impressive that it was for the first round units, these differences are still statistically significant and run in a positive direction favoring the COHORT units as predicted.

The only horizontal bonding item where we did not find a statistically significant difference between the COHORT and IRS soldiers in Table 5 was on P31. Nearly identical percentages of COHORT and IRS E1-E4s disagreed or strongly disagreed that people really look out for each other in their company, 38% and 39% respectively (Means of 2.74 and 2.73). We must therefore accept the null hypothesis on this one measure of horizontal bonding that there is no difference between the COHORT and IRS units. While Table 5 leads us to the overall conclusion that horizontal bonding was still higher in these second round COHORT units compared with the conventionally deployed units, it also makes clear that the cohesive climate was not as positive among these COHORT units as it was among the first round COHORT units.

The relative horizontal bonding may have continued higher in COHORT units during the second round deployment but, as Table 6 makes clear, on other measures of unit climate COHORT units fared far worse than their IRS controls. COHORT first-termers were significantly less likely than IRS first-termers to agree or strongly agree that their company officers really seem to know their stuff, 23% to 36% (P3), or that their officers would lead well in combat, 14% to 29% (P33). The COHORT soldiers were furthermore less likely to agree or strongly agree that their superiors make a real attempt to treat them as persons, 15% to 32% (P26). Finally, the members of the COHORT units have slightly less confidence in themselves as individuals if they have to go into combat (P21 mean of 3.61 vs. 3.89). There are no significant differences between COHORT and IRS units on unit climate items having to do with confidence in weapons, quality of training, or confidence in NCOs (Items P6,P18,P20, & P34), but confidence in weapons and training is significantly lower in these COHORT units than it was in the first round COHORT units.

The results on these other measures of unit climate where we did not hypothesize a COHORT effect help to validate those items where we <u>did</u> hypothesize (and successfully found) a positive effect for COHORT units in both the first and second round deployment. Our claim that these other measures of unit climate may be related to but are not the same as horizontal bonding, and therefore that COHORT units may be higher, lower, or similar to

TABLE 6

SURVEY ITEMS WHERE COHORT IS NOT HYPOTHESIZED TO HAVE AN EFFECT

Second Round Post-Deployment COHORT Companies v. Same Battalion IRS Companies

Mechanized Infantry, Armor, Field Artillery (2 BNS Each, Line Companies)

T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
P3	The officers in this company really seem to know their stuff.	2.73	3.07	-3.3*
P6	The NCOs in this company really seem to know their stuff.	2.74	2.69	.4
P18	I have real confidence in our weapons.	2.99	3.16	-1.7
P20	I think the level of training in this company is very high.	2.67	2.77	-.9
P21	If I have to go into combat, I have great confidence in myself.	3.61	3.89	-2.9*
P26	My superiors make a real attempt to treat me as a person.	2.29	2.74	-3.8*
P33	The officers in this company would lead well in combat.	2.48	2.94	-4.2*
P34	The NCOs in this company would lead well in combat.	2.76	2.87	-1.0
N		266-269	169-173	
N(Companies/Batteries)		6	6	

*Statistically Significant Difference at P<.05, Two-Tailed Test

Item Response Codes:
1=Strongly Disagree 2=Disagree 3=Can't Say I Agree or Disagree 4=Agree
5=Strongly Agree

control units on them, has been largely substantiated. In the first deployment, the COHORT units were the same or, in the case of training quality, somewhat higher than the IRS controls on such measures. Now for the second deployment we find that the COHORT units are the same or somewhat lower than the IRS units on the measures. We would argue that these different sets of results are not due to COHORT implementation per se, but rather to other factors like leadership practices which are far more variable from sample to sample given the small number of units we are actually evaluating.

The problem in the relative unit climate of the second round COHORT companies appears to reside in perceptions of officers, and caring leadership more generally. These perceptions are not much more negative than they were for the first round COHORT companies. It is simply the case that the 6 IRS units in this second sample think more highly of (or are less negative about) their officers than either sample of COHORT units or the first IRS unit sample. That this second sample of IRS unit members thinks less badly about its officers than the COHORT soldiers in the same battalions is interesting since interviews with the battalion commanders led us to believe that the problems in the COHORT companies stemmed from a "bad crop" of NCOs. Judging from the survey results which show no significant differences in confidence in NCOs, junior enlisted in the COHORT companies would not be more likely than IRS junior enlisted to agree that their NCOs are "marginal," "weak," or "incompetent" as characterized by their battalion commanders (Marlowe, et al., 1985: (IV)17).

Both NCOs and junior enlisted in second round COHORT units are more likely than their IRS counterparts to have lower confidence in their company commanders. Among junior enlisted, for example, 46% of COHORT company members say their confidence in the CO in the event of combat is low or very low compared with just 15% of IRS company members. Likewise, 55% of the COHORT first-termers rate the relationships between officers and enlisted in the unit as "not so good" or "poor" compared with 37% of the IRS first-termers in the same battalions. This negativity toward officers among COHORT NCOs and junior enlisted extends to significantly worse confidence ratings in the decisions of the battalion and brigade commanders as well. Despite the fact that COHORT soldiers feel more highly bonded to one another, this sense of poor officer leadership and management helps to account for the lower percentage of COHORT vs. IRS E1-E4s who rate their personal morale as "high" or "very high" (27% vs.40%). The COHORT vs. IRS phenomenon of higher horizontal bonding and lower personal morale attributable to poor relationships with officers, and especially the CO, is noted within the NCO samples as well.

Now that we have looked at both the predicted effects of the second round COHORT units on horizontal bonding and the unpredicted differences between the COHORT and IRS units on other measures of cohesion, we can retrieve the reasoning we used for the first round units to make predictions about results on social psychological outcome measures. This reasoning says that higher horizontal bonding in COHORT units will lead to positive social psychological outcomes for COHORT units vs. IRS units provided

there are net COHORT positive or no differences between the two unit types on the other cohesion measures. We have the higher horizontal bonding effect for the second round COHORT units, but for this sample we found net COHORT negative differences on the other measures of cohesion. Therefore, this time we do not expect that we will find significantly positive COHORT unit differences on social psychological outcome measures.

Outcomes for the best survey measures we had available for this sample are presented in Table 7. Based on the argument in the last paragraph, it is not surprising that, in contrast to the results from the first round of deployed units, here we do not find significant differences between COHORT and IRS units in the same battalions on items like "this company is one of the best in the U.S. Army" (P1), "this company would do a better job in combat than most other Army units" (P4), and "the soldiers I regularly work with are the ones I want with me if I have to go to war" (P13). On the outcome item that specifically asks soldiers to make projections about going to bat for their officers (F8), however, we find a significantly higher proportion of COHORT vs. IRS junior enlisted responding that they would only do "a few things" or "nothing at all" for their officers outside normal company duties, 57% to 45%. That the source of the problem here centers on relationships with officers and not all leaders is evident from the fact that there is no significant COHORT vs. IRS difference on the similar outcome question that specifies doing things for NCOs (F9). Finally, the relatively poor officer-enlisted relationships and lack of concerned leadership in the COHORT units, coupled with the subsequent loss in personal morale and self-confidence, are extreme enough to result in a significantly lower Psychological General Well-Being Score for the COHORT E1-E4s (55.6 vs. the fairly normal IRS score of 60.7).

Second Round Deployment-Paired Company Results

As with the first round of deployed COHORT companies, we can make individual comparisons of a COHORT company with an IRS company by battalion. For this data set, therefore, we have six sets of results, and these are summarized in Table 8. We note, as before in Table 4, that the small number of cases per battalion makes the achievement of statistically significant differences difficult. We reiterate, however, the importance of focusing on the pattern of results rather than the individual tests of significance themselves. It will be seen that, despite the very different set of unit climates we have for the second round units in contrast to the first round units, the pattern of results from different variable sets (i.e. horizontal bonding measures vs. other unit climate measures vs. outcome measures) remains very similar.

The first five rows of results in Table 8 show the battalion by battalion findings on the horizontal bonding measures described in Table 5. The effects of COHORT are not as widespread across these measures as they were for the first round

TABLE 7
OUTCOME MEASURES
Second Round Post-Deployment COHORT Companies v. Same Battalion IRS Companies
Mechanized Infantry, Armor, Field Artillery (2 BNS Each, Line Companies)
T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
P1	This company is one of the best in the U.S. Army.	2.58	2.66	-.7
P4	I think this company would do a better job in combat than most other Army units.	2.84	3.04	-1.9
P13	If I have to go to war, the soldiers I regularly work with are the ones I want with me.	3.17	3.11	.5
F8	How much do you think the soldiers in your company would do for their officers outside normal company duties?	2.36	2.67	-3.0*
F9	How much do you think the soldiers in your company would do for their NCOs outside normal company duties?	2.51	2.67	-1.7
GWB	Psychological General Well-Being Scale Score	55.6	60.7	-2.6*
N		240-275	163-176	
N(Companies/Batteries)		6	6	

*Statistically Significant Difference at P<.05, Two-Tailed Test

Item Response Codes (Except F8,F9,GWB):
1=Strongly Disagree 2=Disagree 3=Can't Say I Agree or Disagree 4=Agree
5=Strongly Agree

F8,F9: 1=Nothing At All 2=A Few Things 3=Some Things 4=Most Anything
5=Everything

GWB: Scores Range from 0-110

TABLE 8
PAIRED COMPANY COMPARISONS
COHORT VS. IRS LINE COMPANIES IN THE SAME BATTALION
Second Round Post-Deployment COHORT Companies v. Same Battalion IRS Companies
T-Tests for E1-E4s

CODE	MECH1	MECH2	ARMOR1	ARMOR2	ARTY1	ARTY2
P2	+	0	0	+	0	0
P7	+	0	0	0	0	+
P9	+	0	0	0	+	0
P10	+	0	0	0	0	0
P31	+	0	0	0	-	0
(Hypothesized COHORT Effect Measures, One-Tailed Tests)						
P3	0	0	-	0	-	0
P6	0	0	0	0	0	-
P18	0	0	0	0	0	0
P20	0	0	0	+	-	0
P21	0	0	0	0	0	0
P26	0	0	0	0	-	-
P33	0	-	-	0	-	0
P34	0	0	0	0	0	-
(Other Unit Climate Measures, Two-Tailed Tests)						
P1	0	0	0	+	-	0
P4	0	0	0	0	-	0
P13	+	0	0	0	0	0
F8	0	0	-	0	-	0
F9	0	0	0	0	0	-
GWB	0	-	0	0	0	0
(Outcome Measures, Two-Tailed Tests)						
N RANGE (COHORT/IRS):						
Low	35/33	55/35	29/23	26/23	54/24	41/22
High	37/36	66/41	34/24	29/24	61/27	47/23

KEY
CODE See Tables 5-7 for Item Code Translations

\+ Statistically Significant Difference (P<.05), COHORT Score Higher
\- Statistically Significant Difference (P<.05), COHORT Score Lower
0 No Statistically Significant Difference

MECH1=Mechanized Infantry Battalion #1
ARMOR1=Armor Battalion #1
ARTY1=Field Artillery Battalion #1

N.B. All comparisons are between two individual companies in the battalion.

units. Nevertheless, where differences occur, they are largely in favor of the COHORT units. Of the 30 tests conducted here, 22 of them ran in the predicted direction indicating higher horizontal bonding in the COHORT companies/batteries. Of these 22, 8 were statistically significant. Of the eight tests that did not run in the predicted direction, four occurred in ARMOR1 and two in ARTY1, but only one was statistically significant (P31 in ARTY1). Four of the six battalions have at least one significant difference on the horizontal bonding measures in favor of the COHORT unit. In an additional battalion (MECH2), all of the differences run well in the predicted direction.

Although only a minority of the tests on horizontal bonding did not run in the predicted direction and only one was statistically significant, the generally lackluster performance of the COHORT units on these measures this time versus the first deployment gives us reason to pause. Can we conclude that COHORT was not working as well to produce horizontal bonding in the second round of deployed units? Certainly in the case of the COHORT unit in MECH1 that performs as expected across all of the horizontal bonding measures, this would not seem to be the case. We notice, however, that in that battalion there are no significant differences on the other measures of cohesion between the COHORT and IRS company. What we should question, therefore, is not our understanding of COHORT, but the assumption that our horizontal bonding measures are completely independent of or unrelated to the other measures of cohesion. We had certainly understood all along that the outcome measures were influenced by these other cohesion measures, but had proceeded as if the measures of horizontal bonding were affected only by COHORT status and were immune to what was happening on other cohesion factors. Judging from the results in Table 8, this assumption appears to be untenable, at least when the differences on the other measures of cohesion are severe enough.

We will not demonstrate at this point exactly to what degree the measures of horizontal bonding and other measures of cohesion are correlated.[1] If we look closely, however, at a horizontal bonding item like P31, where the COHORT units did not do as well this time with respect to the IRS controls, we can understand how such correlations might exist. "In this company, people really look out for each other" might imply referencing mainly peer relationships, but it certainly does not exclude relationships with superiors, including NCOs and officers. All of our horizontal bonding items have this quality and thus we would expect that they would be somewhat correlated with the more strictly vertical cohesion measures. For the moment, we will maintain only that we should not underestimate the effects of leadership climate and vertical cohesion on horizontal bonding as we have measured it, and that there exists a point beyond which COHORT cannot buffer the negative effects of relative deficiencies in leadership on horizontal bonding.

[1]Such correlations are demonstrated and discussed vis-a-vis Table 11 in the upcoming Conclusions Section.

Returning to Table 8, we note that only in the MECH1 and ARMOR2 battalions are there significant positive social psychological outcomes for the COHORT units. Given our earlier argument, it is not surprising that these are also the only battalions where there are net positive or no significant differences between the COHORT and IRS units on the other unit climate measures. In marked contrast to the first round unit comparisons, all of the remaining four battalions have at least one significant outcome in favor of the IRS unit in the battalion. At the same time, however, and in keeping with our general argument, in all four of these latter battalions there were net negative significant differences on the other unit climate measures between the COHORT and IRS units. Importantly, there were no battalions where there were net negative significant differences between COHORT and IRS units on the horizontal bonding measures. Furthermore, despite the relatively negative climate in four of the six COHORT units, never did the IRS unit score significantly higher on outcome measure P13, "if I have to go to war, the soldiers I regularly work with are the ones I want with me."

It is in MECH1 where we find the best example of the COHORT potential within the second deployment unit sample. Sixty-eight percent of the junior enlisted in the COHORT company agree or strongly agree that they really know the people they work with very well, compared with 47% of the junior enlisted in the IRS company. Likewise, 75% of the COHORT soldiers versus just 38% of the IRS soldiers agree or strongly agree that their closest friendships are with the people with whom they work. Finally, over half (53%) of the IRS first-termers disagree or strongly disagree that people really look out for each other in the company while less than one seventh (14%) of the COHORT first-termers respond similarly. There are no significant differences between the two companies on the other measures of cohesion presented in Table 8, but it is interesting that on a separate item that asks about confidence in the company commander in the event of combat, over half (56%) of the IRS E1-E4s responded that it was "very high" or "high" while none (0%) of the COHORT E1-E4s chose those responses. Instead, 68% of the latter said that such confidence was "a little low" or "very low." This finding helps to account for the fact that the only significant difference between the two companies on the outcome measures was on P13, where the entire company is not referenced. (69% of the COHORT soldiers agreed or strongly agreed that they would want to go to war with the soldiers with whom they regularly worked compared with 26% of the IRS soldiers.) That there were no significant differences between the two companies on items that referenced officers in general (though P33 and F8 do run in favor of the IRS company), shows just how discriminating soldier respondents can be with respect to individual survey items.

In MECH2 the officer problems in the COHORT company apparently went beyond just the company commander since 67% of its junior enlisted disagreed or strongly disagreed that their officers would lead well in combat (P33) in contrast to 39% of the IRS company junior enlisted. COHORT confidence in the

company commander in the event of combat was miserable as well, however, with 79% assessing it "a little low" or "very low" compared with 15% for these responses in the IRS company. While all the horizontal bonding items run in the predicted direction favoring COHORT (though there are no significant differences with the IRS company), the officer situation was apparently bad enough in the COHORT company to render it full of anxiety and depression judging from its low Psychological General Well-Being Score of 47, which was significantly lower than the fairly normal score of 59 found in the IRS company.

Officer problems persisted in the COHORT company in ARMOR1, where 65% of the junior enlisted said the soldiers would do "nothing at all" or only "a few things" for their officers compared with 33% of the IRS company junior enlisted. As in MECH2, the COHORT potential was not strong enough to overcome the other unit climate deficiencies to produce significantly higher horizontal bonding or positive social psychological outcomes. The most severe case of across-the-board difficulties with leadership involving officers in the COHORT unit occurs in the ARTY1 battalion. Only 23% of the COHORT E1-E4s in ARTY1 think their officers know their stuff (P3) and even fewer (13%) think their officers would lead well in combat (P33), compared with 56% and 26% in the IRS battery. What is more, 64% of these COHORT artillery soldiers disagree or strongly disagree that their superiors make a real attempt to treat them as persons (P26), while only 22% of the members of the IRS battery have the same perception. The COHORT battery is demoralized enough that out of the 15 COHORT units examined in the first and second round deployment, it is the only one where the soldiers are significantly less likely than their IRS counterparts to agree that their company is one of the best in the Army (P1), that their company would do a better job in combat than most other Army units (P4), and that people in the company look out for one another (P31).

Lest we think that the relative leadership problems in COHORT units in our sample of six battalions involve officers only, we have in ARTY2 a case where there are no significant differences between the COHORT and IRS batteries on the items that specifically reference officers. However, for this one case, NCOs appear to be the demoralizing unit climate factor in the COHORT battery. Only 19% of the COHORT soldiers agree/strongly agree that their NCOs know their stuff (P6) versus 61% in the IRS battery. Similarly, 15% (COHORT) versus 59% (IRS) agree/strongly agree that their NCOs would lead well in combat (P34). After adding in the fact that 11% (COHORT) versus 45% (IRS) agree/strongly agree that their superiors make a real attempt to treat soldiers like persons (P26), it is little wonder that horizontal bonding in the COHORT battery is not higher than it is, that there are no significant outcomes in the COHORT battery's favor, and that 62% of the COHORT soldiers versus 30% of the IRS soldiers say they would do only "a few things" or "nothing at all" for their NCOs outside normal company duties (F9).

Second Round Deployment-Specific Leadership Problems

A number of questions were asked within the Data Set #2 survey that enable us to further understand and validate the relative leadership climate difficulties in the second round COHORT units. For example, soldiers were asked to rate their leaders along seven-point continua where each end of a continuum was an opposing pole of a pair of personal qualities. Thus, one continuum might read "competent" on one end and "incompetent" on the other, while another continuum might read "committed" on one end and "uncaring" on the other. Twenty such continua are listed in Table 9, along with the statistically significant point-spreads between the COHORT and IRS soldiers for three different unit or platoon-level leaders: the company commander, first sergeant, and platoon sergeant.

On all twenty continua, the COHORT first-termers rated their company commanders significantly more toward the negative member of the quality pair than did IRS first-termers. They also were less positive than IRS soldiers on three qualities vis-a-vis their first sergeants and eight qualities vis-a-vis their platoon sergeants, but almost invariably by smaller margins than for the company commander differences. This validates our earlier conclusion that the unit climate difficulties for the second round COHORT companies related mainly to perceptions of COs. However, in no case did the COHORT soldiers rate their leaders more toward the positive member of the quality pair than the IRS controls. For all three varieties of leaders, COHORT junior enlisted were more likely to characterize them as less honest than dishonest, less trusting than suspicious, and less kind than cruel.

Though all the differences for the company commander were significant, thus indicating a blanket effect, some were larger than others. The continua where there were the greatest differences (value of -1.2 or worse) suggest that COHORT soldiers were more likely to think of their COs as unfair, cowardly, unskilled, suspicious, worthless, and acting like followers rather than leaders. In some battalions, for example MECH2, negative differences on these items exceeded three points for the COHORT versus the IRS unit. There are a number of potential explanations for these results, the most tempting of which is that the management of a COHORT unit in an IRS battalion, and more generally within an IRS Army, is something for which commanders are not adequately prepared. In terms of leadership and training, COHORT soldiers may in fact demand a different consciousness or orientation from officers in order to maintain vertical cohesion (see Kirkland, 1987). Nevertheless, we have examples from both the first and second round of deployed units where COHORT units were not significantly worse than their same battalion IRS control units in their perceptions of officers, and a couple of cases where they were even significantly better. We must therefore hesitate before generalizing about commanders in all COHORT units.

TABLE 9

SOLDIERS' DESCRIPTIONS OF THEIR LEADERS' QUALITIES

Second Round Post-Deployment COHORT Companies v. Same Battalion IRS Companies

Mechanized Infantry, Armor, Field Artillery (2 BNS Each, Line Companies)

Significant Differences Based on T-Tests for E1-E4s

QUALITY	POINT DIFFERENCE BY LEADER		
	CO CDR	1ST SGT	PLT SGT
More Smart than Dumb	-.96	.0	.0
More Honest than Dishonest	-1.11	-.58	-.80
More Fair than Unfair	-1.35	.0	-.74
More Brave than Cowardly	-1.27	.0	.0
More Committed than Uncaring	-.83	.0	.0
More Fearless than Frightened	-.77	.0	.0
More Confident than Uncertain	-1.02	.0	.0
More Expert than Unskilled	-1.30	.0	.0
More Trusting than Suspicious	-1.22	-.42	-.56
More Ethical than Unethical	-1.05	.0	-.59
More Interested than Indifferent	-1.07	.0	-.49
More Competent than Incompetent	-1.01	.0	.0
More a Leader than a Follower	-1.20	.0	.0
More Cool than Angry	-.54	.0	-.58
More Valuable than Worthless	-1.21	.0	.0
More Flexible than Rigid	-1.07	.0	.0
More Kind than Cruel	-1.11	-.58	-.77
More a Friend than an Enemy	-1.02	.0	-.61
More Tough than a Weakling	-.83	.0	.0
More Motivated than Unmotivated	-.88	.0	.0
N RANGE (COHORT/IRS)			
Low	246/139	241/131	238/134
High	252/149	249/140	244/142
N Companies/Batteries (COHORT/IRS)	6/6	6/6	6/6

KEY

POINT DIFFERENCE= Number of Points Toward the Positive End of a 7-Point Continuum (Stated First in the Pair of Qualities) that Members of COHORT Companies Differ from Members of IRS Companies in the Same Battalions.

All differences given are statistically significant at $P<.05$ (Two-Tailed Test) except the value (.0) which indicates no statistically significant difference.

CO CDR= Company/Battery Commander
1ST SGT= First Sergeant
PLT SGT= Platoon Sergeant

The best explanation for the relatively worse perceptions of officers in the second round COHORT units is that by random chance the officer component of vertical cohesion in the IRS units is superior to that in the COHORT units for this particular sample. Note, for example, that the mean on the item "officers in this company really seem to know their stuff" (P3) stays approximately the same between the first and second round of COHORT units (2.70 versus 2.73), but jumps significantly between the two IRS samples (2.76 to 3.07). Such changes or changes in differences were not predictable either in terms of IRS or COHORT status. The important thing is that predicted differences in horizontal cohesion between COHORT and IRS units were maintained overall despite the positive effects on unit climate in the second sample IRS units related to an improved set of soldier-leader relationships.

Given observations of the second round COHORT units reported in Technical Report #1 (Marlowe, et al., 1985), we should have been surprised if perceptions of officers had been any more positive for these units than they were for the first round COHORT units. Unfortunately, here as with the first round units the experience among COHORT soldiers of excessive work hours and numbers of details was viewed as advancing no other mission than the CO's career. As the quantitative results suggest, these COHORT soldiers were perfectly capable of saying "we are tight" and "we are brothers" in the same breath as "we are treated like dogs" and "we'll die well but you won't get any re-ups out of this company." That they could have been even tighter with more effective leadership represents a failure to take advantage of the COHORT potential to enhance cohesion throughout the unit.

We can get an even better idea of the exact nature of the leadership shortfall in second round COHORT units by examining Table 10. Most of the items in this table were adapted from those written by the Army Research Branch in World War II to assess soldier morale, and therefore can help us flesh out some of the COHORT versus IRS differences uncovered to this point. For example, we noted in Table 9 that COHORT soldiers were more likely than IRS soldiers to say that their company commanders and platoon sergeants were unfair. Part of this perception can be attributed to the fact that COHORT junior enlisted are less likely to agree that the most deserving soldiers usually get the best breaks in the unit (F13). On other measures of leader-soldier interaction, we find COHORT first-termers less likely to say they are told enough about a job so that they can do well (F11), as well as less likely than IRS first-termers to agree that it is worthwhile to make suggestions to their leaders (F35). The interview finding that COHORT soldiers receive less free time than their fellow battalion members is verified by the significant difference on F29, which asks about whether there is enough time available to take care of personal business.

Training deficiencies in the second round COHORT units are indicated by the results on F18 and F19, which show that perceptions of current training readiness among COHORT soldiers compare unfavorably to those of IRS soldiers. Whether due more to failure to experience accretive, cross, and cross-echelon

TABLE 10

ADDITIONAL DIAGNOSTIC MEASURES RELATED TO UNIT COHESION LEVELS

Second Round Post-Deployment COHORT Companies v. Same Battalion IRS Companies

Mechanized Infantry, Armor, Field Artillery (2 BNS Each, Line Companies)

T-Tests for E1-E4s

Code	Item	COHORT Mean	IRS Mean	T Stat
F11	When you are given a job to do, are you told enough about it so that you can do a good job?	3.09	3.34	-2.4*
F13	Do you feel the most deserving soldiers usually get the best "breaks" in your outfit?	2.22	2.45	-2.1*
F18	Do you think that you are in tough enough physical condition for going into combat?	3.52	3.83	-3.0*
F19	Do you feel that you are trained and ready for combat?	3.09	3.32	-2.3*
F25	Of the soldiers in your unit, both officers and enlisted, how many use too much alcohol to the extent it causes problems in your unit?	2.46	2.16	3.4*
F29	Do you have enough time to take care of your personal needs such as going to medical appointments, commissary shopping, going to the cleaners, getting a haircut, and things like that?	2.51	2.82	-2.8*
F35	How worthwhile is it to make suggestions to your leaders?	2.50	2.87	-3.5*
F36	How "messed up" is your unit?	2.29	2.78	-4.3*
F38	When you first came into this unit, how much of an effort did people in the unit make in order that things ran smoothly for you?	3.24	2.98	2.2*
F39	How does this unit compare with others in terms of leadership?	2.80	3.02	-2.1*
N		265-275	171-176	
N(Companies/Batteries)		6	6	

*Statistically Significant Difference at P<.05, Two-Tailed Test

Item Response Codes:

F11,13,18,19: 1=Definitely Not 2=No 3=Not Sure 4=Yes 5=Definitely Yes

F25: 1=None of Them 2=Few 3=About Half 4=Most 5=All of Them

F29: 5 Point Scale from 1=Not Enough Time At All to 5=More Than Enough Time

F35: 5 Point Scale from 1=Definitely Not Worthwhile to 5=Definitely Worthwhile

F36: 5 Point Scale from 1=Messed Up a Lot to 5=Not At All, Runs Smoothly

F38: 5 Point Scale from 1=No Effort At All to 5=A Lot of Effort

F39: 5 Point Scale from 1=Much Worse to 5=Much Better

training in CONUS or ill-adjustment to the new USAREUR environment, the battalion commanders as well the soldiers themselves voiced dissatisfaction with the quality of COHORT training in interviews and written comments (Marlowe, et al., 1985). Training in basic skills, along with the maintenance of barracks standards and physical readiness, were all areas where COHORT needed improvement. Again, however, such findings do not question the horizontal bonding among COHORT enlisted or its potential for motivating teamwork. They merely point out a history of leadership failings to guide and make effective use of such bonding, or even to recognize that such neglect is taking place in the first place.

Though the assistance may not have been as complete as it was for the first round units, second round COHORT soldiers did perceive a greater effort on the part of the unit to make sure things ran smoothly for them upon arrival than their IRS fellows experienced (P38). Aside from this one positive difference in leader behavior observed by junior enlisted members of COHORT units, all the other differences in leadership run toward the significantly more negative in the COHORT units. That the COHORT soldiers found more extensive alcohol-related problems in their units (F25) and described their units more often as "messed up a lot" (F36) should not have been unanticipated.

Second Round Deployment-Conclusions

The lessons learned from the COHORT second round deployment both reinforce and complicate those from the first round units. On the one hand, we once again found that on cohesion measures specifically relating to horizontal bonding, members of COHORT units score higher overall than their IRS counterparts past the midpoint of the COHORT life cycle. This time, however, the generally higher horizontal bonding scores among the COHORT troops were in spite of net negative differences with the IRS troops on other measures of unit climate. The horizontal bonding differences were greater between the first round COHORT units and the IRS controls, but in that sample there were net positive differences on the other unit climate measures favoring COHORT. Scores were occasionally lower for the second round versus first round COHORT units, especially on confidence in training, but equally important was the fairly widespread improvement in scores between the first and second IRS samples, with improvement on confidence in officers and caring leadership great enough to allow for significant differences with the COHORT sample.

The significant rise in IRS scores on some of the vertical cohesion items was not predicted based on IRS status alone and must be attributed to the small number of units we are examining at both points in time. In other words, it is not surprising that fewer than ten IRS units would by chance happen to have better unit climate scores than some other group of IRS units. We would also make the argument, based on the results from this section, that higher vertical cohesion scores in IRS units contribute to higher unit climate scores overall, including on

measures of horizontal cohesion. The important lesson, therefore, from the point of view of COHORT units in those same IRS battalions, is that the predicted differences on horizontal bonding between IRS and COHORT units, though reduced in size, will still hold up overall in spite of certain positive shifts in IRS unit climates.[1] However, since horizontal bonding is only one dimension of cohesion, results on outcome measures will not be significantly better in COHORT units when there are net negative differences with the IRS units on the other dimensions.

While the resiliency of horizontal bonding in the COHORT units was visible overall in the second round deployment, we discovered that on a battalion by battalion basis, the COHORT company was not always higher than the IRS company on every measure of horizontal bonding, either in terms of the direction or the significance of the effect. In one case on one such measure, the COHORT company was even significantly lower than the IRS company. For all the battalions, however, we saw over and over again how COHORT effects or lack of them on both horizontal bonding and outcome measures could be understood by what was happening in the companies with respect to the vertical dimension of cohesion. Though the sample was limited to six battalions, we had a good deal of variation in vertical cohesion differences from battalion to battalion, from cases where there were generally no relative deficiences in leadership in the COHORT company, to cases where relative deficiences lay mainly in confidence in officers, to a last case where the problem was a relative lack of confidence in NCOs. Obviously, none of this variation in vertical cohesion (or that for the first round units) can be attributed to COHORT itself. These data suggest, however, that its existence can modulate the potential positive effect of COHORT on both horizontal bonding and outcome measures. When differences on vertical cohesion with IRS controls are positive, the COHORT effect is enhanced, and when they are negative, the effect is muted.

We offer some statistical evidence for how vertical cohesion measures impact upon horizontal bonding and outcome measures in Table 11. We note that while the horizontal bonding measures are fairly well correlated with one another (Table 11, Part A correlations of .28 to .58), the other measures of unit climate are also significantly correlated with them (Part B). Of particular importance are the substantial correlations of the vertical cohesion measures (P3,6,26,33,34) with the horizontal

[1]The consistency of the significant effect of COHORT on most of the measures of horizontal bonding when differences on other measures of unit climate are net positive with IRS controls (first deployment), as well as when they are net negative (second deployment), greatly helps in overriding some of the fears contingent on working with small samples of units. Having seen COHORT work similarly under two fairly different sets of unit climates leaves the issue of the representativeness of either sample unanswered, but of less concern than it would otherwise be.

TABLE 11
ESTIMATES OF POPULATION CORRELATIONS FOR UNIT CLIMATE MEASURES
DATA SET #3 (104 COMBAT ARMS COMPANIES)
E1-E4s (N=4452)

PART A: CORRELATIONS AMONG HORIZONTAL BONDING MEASURES

	P2 CLOSE	P7 KNOWWELL	P9 AFTERDUTY	P10 FRIENDSHP
P7 KNOWWELL	.38			
P9 AFTERDUTY	.28	.28		
P10 FRIENDSHP	.29	.33	.52	
P31 LOOKOUT	.58	.34	.28	.30

PART B: CORRELATIONS BETWEEN HORIZONTAL BONDING MEASURES AND OTHER UNIT CLIMATE MEASURES

	P3 OFFKNOW	P6 NCOKNOW	P18 WEAPON	P20 TRAIN	P21 SELF	P26 TREATME	P33 OFFLEAD	P34 NCOLEAD
P2 CLOSE	.38	.40	.23	.36	.16	.38	.34	.38
P7 KNOWWELL	.21	.28	.15	.25	.24	.24	.21	.26
P9 AFTERDUTY	.15	.18	.07	.14	.10	.17	.13	.17
P10 FRIENDSHP	.14	.16	.11	.15	.13	.18	.13	.15
P31 LOOKOUT	.37	.39	.25	.36	.18	.44	.40	.42

ALL CORRELATIONS ARE STATISTICALLY SIGNIFICANT AT P<.05

KEY: SEE TABLES 5-7 FOR ITEM CODE TRANSLATIONS

TABLE 11 (CONTINUED)
ESTIMATES OF POPULATION CORRELATIONS FOR UNIT CLIMATE MEASURES
DATA SET #3 (104 COMBAT ARMS COMPANIES)
E1-E4s (N=4452)

PART C: CORRELATIONS BETWEEN UNIT CLIMATE MEASURES AND OUTCOME MEASURES

	P1 BESTCO	P4 COMBATCO	P13 WARWITH	F8 DOFOROFF	F9 DOFORNCO
P2 CLOSE	.54	.48	.41	.35	.39
P7 KNOWWELL	.27	.28	.33	.21	.24
P9 AFTERDUTY	.18	.17	.27	.15	.16
P10 FRIENDSHP	.18	.18	.33	.16	.18
P31 LOOKOUT	.43	.41	.41	.34	.35
P3 OFFKNOW	.47	.47	.28	.48	.30
P6 NCOKNOW	.41	.42	.33	.29	.40
P18 WEAPON	.32	.32	.21	.23	.22
P20 TRAIN	.47	.49	.32	.32	.30
P21 SELF	.20	.27	.24	.12	.14
P26 TREATME	.42	.36	.30	.38	.41
P33 OFFLEAD	.49	.50	.31	.49	.30
P34 NCOLEAD	.43	.45	.36	.31	.51

ALL CORRELATIONS ARE STATISTICALLY SIGNIFICANT AT P<.05
KEY: SEE TABLES 5-7 FOR ITEM CODE TRANSLATIONS

indicators of "closeness" in the company (P2), and whether company members really look out for one another (P31). These correlations run from .34 to .44. In Part C, we see that these same vertical cohesion measures, along with confidence in training (P20), appear to be as important in terms of raw correlations with outcome measures as the horizontal bonding measures. Notice, for example, that perceptions of "closeness" in the company (P2) are correlated between .35 and .54 with the outcome measures, and perceptions of NCOs' leadership ability (P34) have correlations with the outcomes that range from .31 to .51.

Based on the results from the first round of deployed COHORT units, it is not surprising that we continue to find strong relationships between social psychological outcomes and confidence in officers, confidence in NCOs, and how much soldiers feel treated like persons by their leaders. These relationships are, of course, in addition to those we find between horizontal bonding and the outcome measures, which is the avenue through which COHORT works. With the second round of COHORT units, we have come to realize that the horizontal bonding measures themselves may be affected by the other unit climate measures, and especially vertical cohesion.[1] While again we defer the modelling of these relationships, we can still state confidently that the realization of COHORT in the company replacement model, however imperfect the implementation, does lead to higher horizontal bonding and more positive social psychological outcomes, provided other unit climate factors are no worse than roughly (net) equivalent to those in the IRS control sample.

[1]Only if junior enlisted had abandoned the goals and legitimate order of the Army or installed norms of their own would we expect there to be no relationship or a negative relationship between horizontal and vertical cohesion.

Subsequent Company Replacement Model Samples

A small number of COHORT companies formed under the company replacement model were surveyed up to three times between May 1985 and December 1986 in conjunction with the larger survey of COHORT battalions administered by BDM Corporation. At the time of the first survey (Data Set #3), some of these companies were at the beginning of their life cycle in CONUS (less than ten months following formation), while another set had been deployed to USAREUR and were within two to sixteen months of disestablishment. Thus for the second survey (Data Set #4) what remained of the latter set was within ten months of disestablishment, while the former companies were still predeployment in CONUS (not quite midway through their life cycle). By the time of the third survey (Data Set #5), all of these COHORT "independent" companies were mature units, although a few of them had not yet deployed to USAREUR.

Both the mix of COHORT companies and IRS control companies changed over time so that longitudinal matches of companies are extremely few. In addition, an entire post where seven of the sampled companies were located was dropped between the second and third surveys for logistical and economic reasons. With respect to the IRS control units, care was taken only to ensure a reasonable match by unit type, i.e. the mix of mechanized infantry, armor, and field artillery units, so that comparisons by battalion or post are largely infeasible. Nevertheless, the results from these COHORT units will allow us to do two things in addition to adding to our general store of data on the company replacement model. First, we will see if hypotheses like those previously advanced can be successfully tested with scale scores instead of individual items. Secondly, we will get some idea, though only on a cross-sectional basis, about whether COHORT scores look different at earlier versus later points in the unit life cycle.

Development of Unit Climate and Cohesion Scales

Because scales offer a shorthand way of testing survey response differences related to such phenomena as horizontal bonding and vertical cohesion, they are often preferable to examining many individual items, despite the loss of information associated with adding such items together. Generally speaking, scales also provide us with more reliable measures for the phenomena we are investigating, provided such phenomena are well-defined enough so that the inclusion or exclusion of individual items follows some clear set of criteria. Most of the items used to measure cohesion and unit climate were preserved across Data Sets #3-8, which incorporated many items from Data Sets #1 and 2 as well, thus making the use of scales both feasible and desirable for longitudinal purposes.

Appendix B contains the four sets of items (described in Marlowe, et al., 1985) from which cohesion, unit climate, and self-esteem scales were constructed. (The fifth set of items are

those that comprise the Psychological General Well-Being Scale.) Of the 107 items listed within the four item sets, 78 were retained across Data Sets #3-7. The following made up the minimum set of constructs with which we wished to test hypotheses like those above, and therefore those into which the available items were initially sorted:

1. Horizontal Cohesion (Soldier-Soldier). Estimations of affective and instrumental ties among unit members.

2. Expressive Vertical Cohesion (Soldier-Leader). Perceptions of concern or personal interest from leaders toward their soldiers.

3. Instrumental Vertical Cohesion (Soldier-Leader). Perceptions of leaders' military competency, proficiency, technical knowledge, or combat leadership skills.

4. Positive Military Identity and Role in the Unit. The soldier's assessment of his own military efficacy, worth, and pride.

5. Combat Readiness. Assessments of company training, weapons quality, and fellow soldiers' readiness for combat.

Factor analyses[1] of the items suggested that Horizontal

[1]Since we had a preconceived set of constructs for hypothesis testing, factor analyses were not used to generate factors from scratch. No claims are made, therefore, that the scales developed here are those that "best fit" any one or all of the data sets. Results of factor analytic varimax rotation models with five, six, and seven factor solutions were inspected only to ensure that items grouped together on a single construct generally loaded together on the same factor, and that we had not overlooked other (unambiguous) factors of potential hypothesis-testing value. Appendix C contains the factor analytic findings from the six-factor solution for Data Sets #3 and 4. Items hypothesized to belong to a construct did for the most part load (.40 or above) on the same factor in these analyses, although the General Social Bonding, Confidence in Officers, and Confidence in Weapons and Training items did not load on separate factors. While split loadings were fairly common throughout the analyses, the platoon leader items (U4 and S20) and the weapons items (U13, U17, F14, and P18) had low or unstable enough loadings to warrant future measure refinement. For the current analyses, however, conceptual considerations related to hypothesis testing precluded shifting such items to other scales.

By the minimum eigenvalue of 1.0 criterion, 15 factors were suggested by the principal components analysis for both Data Sets #3 and #4. However, none of these factors produced new constructs of substantive or meaningful value. Scree plots

Cohesion and Instrumental Vertical Cohesion could meaningfully be separated into two scales each. For Horizontal Cohesion, items having to do with closeness, "tightness," trust, cooperation, and looking out for one another at the company and unit level tended to hang together apart from items having to do with spending time with unit members after duty hours, or being able to depend on squad and platoon members in a personal emergency. For Instrumental Vertical Cohesion, items referencing NCOs hung apart from those referencing officers or leaders in general. While both pairs of item sets still fit under their respective conceptual categories of Horizontal Cohesion and Instrumental Vertical Cohesion, our work in the previous sections did not contradict the utility of being able to conduct separate tests of these four item sets. We arrived, therefore, at the following set of seven scales as indicators of cohesion and unit climate:

1. Military Self-Esteem. Seven items that included a rating of skills and abilities as a soldier, confidence in self, and pride in one's role in the Army and the company.

2. General Social Bonding. Six items that included perceptions of closeness, togetherness, "tightness," teamwork, cooperation, and trust in the unit or company.

3. Off-Duty Associations. Seven items that included reports of spending time with unit members after duty hours, friendships with workgroup members, and perceptions of whether fellow squad and platoon members can be approached with personal problems or for money in emergencies.

4. Caring Leadership. Nine items that included perceptions of leaders' interest in the soldier's personal welfare and how he thinks and feels about things, whether leaders

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suggested between one and nine factors, but eigenvalues drop to less than 4.0 and account for 5% or less of the total after the first factor. If we were strictly doing exploratory work, we might well conclude that there was a single underlying unit climate and cohesion factor. The factor structure of our idiosyncratic set of items at any point in time, however, was of less concern than having parsimonious, consistent, and face valid measures with which to test COHORT effects across data sets.

Appendix C also contains the intercorrelations of the final set of seven scales. These correlations are in the moderate to high range, although only two run as high as .70 and most are in the .5 range, indicating strong but not inordinate levels of multicollinearity. We have no conceptual or empirical reason to be surprised at the level of these correlations. On the contrary, it would be difficult to imagine a set of constructs based on our item pool whose intercorrelations would be so low as to justify sole use of varimax rotation models for factor derivation.

talk to him personally outside normal duties, and whether he feels treated as a person by his superiors.

5. Confidence in Officers. Nine items that included confidence in the platoon leader and company commander in the event of combat, whether company officers "know their stuff," and whether the leaders in the company are of impressive quality and better than those in other units.

6. Confidence in NCOs. Five items that asked about whether the NCOs in the company, including the soldier's squad leader and platoon sergeant, know their stuff and would lead well in combat.

7. Confidence in Weapons and Training. Eleven items that inquired about the company's level of training, combat readiness, quality and condition of weapons, fellow soldiers' ability to use weapons, confidence in weapons systems, and potential success in combat.

Detailed analyses of these scales are presented in Appendix C and are complete with reliability tests using matched and unmatched samples from Data Sets #3 and 4, factor loadings from the same data sets, ranges of item correlations with the scale item that best defines the scale conceptually, Cronbach's alphas, mean inter-item correlations, univariate data for Data Sets #3 through #6 at both the individual and company level, and inter-scale correlations. These analyses generally show good correlations of the items within the scales, high overall reliabilities (alphas over .80), and reasonable levels of parsimony (alphas/number of scale items).

In addition to the face validity of the scales in terms of their conceptual referents, the similar performance of same scale items in the previous analyses, and the loading together of most same scale items on the same factors in factor analyses, we have a number of additional indications of scale validity. For example, of all seven scales Military Self-Esteem shows the least amount of company level variation. This would be expected from the scale that purports to measure perceptions of self rather than of the unit. Similar to the Psychological General Well-Being scale where 96.1% of its variance is at the individual level, over 91% of the variance in Military Self-Esteem is also at the individual level, compared with, for example, just 79.5% of the variance in Confidence in Officers. In other words, less than 9% of the variance in Military Self-Esteem can be accounted for at the group level (which for us includes the battalion, company, platoon, and squad) in contrast to over 20% of the variance in Confidence in Officers. Military Self-Esteem, as expected, also has the highest correlations with Psychological General Well-Being of all seven scales (.47-.56).

Marital status helps us to validate the separation of the horizontal bonding scales (General Social Bonding and Off-Duty Associations) from the remaining scales since single soldiers score higher than married soldiers on these two scales, whereas

there are no differences on the vertical cohesion or military self-esteem scales by marital status. Soldiers who live in the barracks also score higher on the horizontally-related scales than do soldiers who live outside the barracks in on-post or off-post housing. Off-Duty Associations scores for all soldiers are higher than General Social Bonding scores, and this helps validate the separate contents of the two scales since higher cohesion would be expected in the case of the former scale with its references to squad and platoon, in comparison to the latter scale with its references only to the company or unit.

Validation of the vertical cohesion scales rests mainly with a dramatic decline in scale score values that was consistent with conclusions drawn from observations and interviews conducted independently in a light infantry division (Marlowe et al., 1987).[1] These scales are also highly correlated as expected with items having to do with the implied behavior of leaders, for example the perception of soldiers that they have enough time to take care of personal business and spend time with family and friends. At the level of company means, junior enlisted Confidence in NCOs was related as predicted to company NCOs' own Military Self-Esteem and junior enlisted Confidence in Officers was likewise related to company officers' own Military Self-Esteem. These latter relationships were not interchangeable, e.g. Confidence in NCOs with officers' Military Self-Esteem, which was a further check on mutual scale validity. Finally, the interscale correlations of the three vertical cohesion scales, i.e. Caring Leadership, Confidence in Officers, and Confidence in NCOs, were higher than those among the remaining scales, a sign of concurrent validity.

While we have no independent validity check for Confidence in Weapons and Training, an examination of the soldiers' written comments indicated that these scores were lowest when the unit had recently experienced mechanical failures with equipment or vehicles, there had been a failure to qualify a vehicle or to shoot well on the range, training areas had been unavailable for a prolonged period, little new training had been received, or certain kinds of training (e.g. escape and evasion) were perceived to be underemphasized in the unit.[2]

[1]The qualitative data suggested that in order to meet multiple division requirements designed to keep the new division in high profile, leaders felt compelled to push soldiers to the limits of their endurance in terms of duty roster assignments, training standards, preparations for official visitors, and demonstration exercises. The hours worked beyond the normal duty day and excessive days in the field seemed to the soldiers to be entirely at their expense and geared solely for the advancement of officer careers. Trust between those leading and those led quickly eroded and was noted in the interview data. The survey data corresponded well to these changes in leadership climate.

[2]It must be kept in mind that all of these statements concerning scale validity are related only to the junior enlisted sample of E1-E4s. Furthermore, scale scores from NCOs and officers are

Scale scoring for all seven cohesion and unit climate scales is described in Appendix C. It will be noticed that, in order to correct for different numbers of scale items within different scales, all scales have been rescored to run from 0 to 100, with 50 as the score indicating an average neutral response to the items contained within the scale. As Table 12 points out, scores above 50 designate average positive responses to the scale's individual items, those below 50 show average negative responses to the particular set of items. Because the scales have slightly different standard deviations, caution must be exercised in making comparisons across scales. However, in reviewing Appendix C, we find that the scale standard deviations are fairly similar across scales and very stable within the same scale over time, thus alleviating any great concern about reporting converted scores that are unstandardized.

If Table 12 gives us the absolute meaning of the converted scale scores in terms of the survey instrument, Table 13 gives us the relative meaning of scale scores in terms of the junior enlisted sample population. Based on means taken across our four largest data sets (#3 through #6, N of E1-E4s > 4000 per data set), the scores in the left-hand column of numbers in Table 13 under "population estimate" are our best guesses by scale as to what the unweighted true average or mean score is for the population of COHORT and IRS soldiers. We note that none of these population estimate scores would be called "high" on our absolute scale from Table 12 since they are all well under 75. In fact, on three of the scales (General Social Bonding, Caring Leadership, and Confidence in Officers), the population estimate is below 50, indicating an overall preponderance of negative responses on the items that make up these scales. These scores are useful, therefore, not only in giving us a set of typical or normative scores against which to compare scores from any particular unit, but also as a way of pointing out those unit climate areas that are most in need of improvement throughout the combat arms.[1]

The right-hand column of scores in Table 13, far from being representative of the combat arms as a whole, gives us scale means from a Ranger battalion surveyed in 1987. Except for Caring Leadership, these scores would be considered "high" on the

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nearly always somewhat to very much higher than those from E1-E4s. For example, in Data Set #5, the average score from E1-E4s on Military Self-Esteem is 59.7, compared with 69.6 from E5-E8s, and 80.1 from O1-O3s, with E8s averaging 84.1 and O3s averaging 85.6. Even on a more group-oriented scale like General Social Bonding, the junior enlisted have a mean score of 43.6 (Data Set #5), compared with 47.1 for NCOs (72.2 for E8s), and 67.5 for officers (77.6 for O3s).

[1]The mean standard deviations presented under these scores reinforce our early arguments that at the individual level scale standard deviations are fairly similar to one another (17.1-21.3), and at the company/battery level Military Self-Esteem has the smallest standard deviation (4.7).

TABLE 12
INTERPRETING UNIT CLIMATE AND COHESION SCALE SCORES

SCALE SCORE	MEANING
100	THE SOLDIER OR SOLDIERS ANSWERED "STRONGLY AGREE" OR "VERY HIGH" TO EVERY ITEM IN THE SCALE (MAXIMUM VALUE)
75	ON THE AVERAGE THE SOLDIER OR SOLDIERS ANSWERED "AGREE" OR "HIGH" TO EVERY ITEM IN THE SCALE
50	ON THE AVERAGE THE SOLDIER OR SOLDIERS ANSWERED "CAN'T SAY" OR "MODERATE" TO EVERY ITEM IN THE SCALE (NEUTRAL POINT)
25	ON THE AVERAGE THE SOLDIER OR SOLDIERS ANSWERED "DISAGREE" OR "LOW" TO EVERY ITEM IN THE SCALE
0	THE SOLDIER OR SOLDIERS ANSWERED "STRONGLY DISAGREE" OR "VERY LOW" TO EVERY ITEM IN THE SCALE (MINIMUM VALUE)

NOTE: ASSUMES ALL ITEMS HAVE BEEN RECODED SO THAT "STRONGLY AGREE" AND "VERY HIGH" INDICATE MORE POSITIVE LEVELS OF UNIT CLIMATE AND COHESION

TABLE 13
ESTIMATES OF POPULATION MEANS AND STANDARD DEVIATIONS
FOR UNIT CLIMATE AND COHESION SCALES (E1-E4s)
WITH COMPARISONS TO RESULTS FROM A RANGER BATTALION

Scale Name	Population Estimate (SD1/SD2)	Ranger Mean (S.D.)
Military Self-Esteem	60.7 (17.5/4.7)	80.7 (13.4)
General Social Bonding	44.8 (20.6/8.4)	75.0 (17.2)
Off-Duty Associations	53.0 (21.0/5.8)	72.3 (19.3)
Caring Leadership	41.0 (20.9/6.8)	57.5 (20.7)
Confidence in Officers	46.4 (19.7/8.0)	76.8 (13.0)
Confidence in NCOs	53.7 (21.3/7.2)	85.9 (13.6)
Confidence in Weapons and Training	52.1 (17.1/6.8)	82.8 (10.1)
N	4156-6370	161-176
N(Companies/Batteries)	90-112	4

KEY

Population Estimate= Mean of the Mean Scale Scores from Data Sets #3,4,5,&6

SD1= Mean of the Scale Score Standard Deviations from Data Sets #3,4,5,&6

SD2= Mean of the Company/Battery Scale Score Standard Deviations from Data Sets #3,4,5,&6

N for the Population Estimate= N Range Across Scales and Across Data Sets #3,4,5,&6

N(Companies/Batteries) for the Population Estimate= N Range of Companies or Batteries Surveyed in Data Sets #3,4,5,&6

Ranger Mean and S.D. (Standard Deviation) are taken from Data Set #8

absolute scale and may well represent the positive extreme to which scale scores can realistically run within the Army. For example, the Ranger score of 75.0 on General Social Bonding is partially based on the fact that 79.6% of the junior enlisted in the four Ranger companies responded that the level of togetherness or tightness in their unit was "high" or "very high" (U15). Likewise, the score of 85.9 on Confidence in NCOs partially reflects the finding that 94.3% of Ranger E1-E4s agree (61% strongly so) that their NCOs "really seem to know their stuff" (P6).

The generally high unit climate and cohesion scores in Ranger companies can be related to the considerable effort and attention the Army expends within the Ranger program to ensure that these troops are well-trained and combat ready. As a result, the scores serve as one set of standards for assessing how well a particular Army unit compares to what are generally agreed to be combat-ready units. The fact that at the company/battery level these scores are two or more standard deviations higher than those typically found in our COHORT/IRS unit sample serves to warn us of the difficulty of achieving what may well be the best case standard of unit combat readiness.

In addition to the seven unit climate and cohesion scales just presented, three other scales were developed to serve as social psychological outcome measures akin to those single item measures we used in the previous analyses. Our argument is that in cohesive units with positive leadership climates, soldiers will (1) feel confident about going to war with the members of their squads, platoons, and companies, (2) be proud of their company or battery, and (3) give their officers and NCOs whole-hearted cooperation. A group of survey items was set aside to measure these three constructs and in Table 14 the resulting three scales with included items and appropriate statistics are presented.

The Would Go to War with Unit scale measures trust in, confidence in, and feeling good about being with fellow squad, crew, platoon, and company members in the event of combat. Company Pride looks specifically at the sense that one's unit is better than others or among the best in the Army, in addition to simple pride in one's unit and feeling that one belongs there. Finally, the Cooperation with Leaders scale taps the level of willing and whole-hearted cooperation NCOs and officers can expect to receive from their soldiers, as well as the dedication or commitment soldiers carry toward their leaders beyond minimal company duties. All three scales are scored in the same manner as the previous seven and show high reliability and good item-correlational properties. With the Psychological General Well-Being Scale introduced earlier, we therefore have four scales that comprise our outcome measures of interest.

Results from Subsequent Company Replacement Model Samples

The unit climate and cohesion scales developed above were used to test hypotheses like those advanced for the first and

TABLE 14
CONTENTS OF SOCIAL PSYCHOLOGICAL OUTCOME MEASURES

I. Would Go to War with Unit

P35. Soldiers in this company have enough skills that I would trust them with my life in combat. (.51-.55)
U6. In the event of combat, how would you describe your confidence in your crew/squad members? (.51-.62)
S21. If we went to war tomorrow, I would feel good about going with my squad. (.71-.75)
S22. If we went to war tomorrow, I would feel good about going with my platoon. (.70-.75)
Alpha= .80-.83 Mean Inter-Item Correlation= .49-.56 N=2410-3229

II. Company Pride

F2. I am proud of my company. (.75-.79)
F3. I really feel that I belong in my company. (.70-.73)
F25. My unit is better than other units in getting the job done. (.52-.59)
P1. This company is one of the best in the U.S. Army. (.66-.71)
P29. I like being in this company. (.70-.72)
Alpha= .85-.88 Mean Inter-Item Correlation= .54-.58 N=2461-3309

III. Cooperation with Leaders

F6. Officers most always get willing and whole-hearted cooperation from soldiers. (.63-.68)
F7. NCOs most always get willing and whole-hearted cooperation from soldiers. (.59-.65)
F8. Outside normal company duties, soldiers in my company would do most anything for their officers. (.65-.68)
F9. Outside normal company duties, soldiers in my company would do most anything for their NCOs. (.57-.61)
U18. The relationships between officers and the enlisted in your unit. (.44-.45)
Alpha= .80-.82 Mean Inter-Item Correlation= .44-.47 N=2467-3344

KEY
Item codes refer to questionnaire sections listed in Appendix B and described in Appendix C.

Response categories for "F" and "P" items run from "strongly disagree" to "strongly agree," for U6 from "very low" to "very high," and for U18 from "very bad" to "very good" (all five-point). See Appendix B.

Alpha=Range of Cronbach's Alphas from four subsamples (in Data Sets #3 & 4) described in Appendix C under ITTOT1 and ITTOT2.

Mean Inter-Item Correlation and N=Range from the same four subsamples.

Range of Item-Total Correlations in parentheses (same four subsamples).

second round of deployed COHORT companies. Although we do not have a set of IRS companies matched by battalion this time, we expect that the pattern of scale score results from these subsequent COHORT "independent" companies versus the IRS control sample will be fairly similar to the prior findings with individual survey items.[1] Again, the difference with this set of COHORT companies versus the previous two sets is that we have data at both earlier and later points in the COHORT unit life cycle.

Tables 15 through 19 contain the COHORT versus IRS mean scale score comparisons for the company replacement model samples in Data Sets #3,4,&5. Tables 15 and 16 present comparisons with the IRS control sample for the COHORT companies that were already post-deployment in USAREUR at the time Data Set #3 was collected. In Table 15, the COHORT company sample was past the midpoint of life cycle (Data Set #3), and in Table 16 the COHORT sample was near the end of life cycle (Data Set #4), as described above. Tables 17, 18, and 19 present comparisons with the IRS control sample for the COHORT companies that were at the beginning of life cycle (predeployment in CONUS) at the time Data Set #3 was collected. Table 17 has the results from Data Set #3 for these beginning of life cycle companies, Table 18 the results from Data Set #4 when the COHORT sample was near mid-life cycle but still predeployment, and Table 19 the findings from Data Set #5 when this sample of COHORT companies was mid to late life cycle and largely post-deployment. It should be noted that the IRS control sample of single mechanized infantry, armor, and

[1]An early hypothesis concerning COHORT versus IRS scale scores posited that COHORT soldiers, due to their greater common experience in the company, would be more likely to view their unit's social climate in the same way, either bad or good. In other words, the standard deviation of COHORT soldier scores around their company means should be smaller than that for IRS soldiers. However, we did not find that the average difference of COHORT soldier scores from their respective company means was significantly smaller than the average difference for IRS soldiers on any of the scales. Individual-level variance was therefore not lower in the COHORT companies. This may be due partly to the fact that in both COHORT and IRS companies scale scores are occasionally distributed in bimodal or trimodal fashion depending on platoon or squad membership. A more likely explanation is that the survey method itself makes it difficult to reduce individual "error" around a company-level score since all respondents can be expected to have slightly different standards in choosing or attaching meaning to one item response versus another. Thus, most of the variation on all of our unit climate and cohesion scales, even those most oriented to perceptions of the group, is at the level of the individual.

Our scales also turn out to be robust across unit type in that both COHORT and IRS soldiers present similar interscale correlations, both cross-sectionally and longitudinally. See Appendix C for overall interscale correlations.

field artillery units in CONUS and USAREUR is the same by Data Set, so that the IRS data are the same in Tables 15 and 17, as well as the same in Tables 16 and 18.

Table 15 presents us with findings with which we should be familiar by now since this set of COHORT line companies was post-deployment in USAREUR like those companies in the first and second round deployment samples. For the most part we are able to arrive at the same conclusions for this COHORT sample using scale scores that we did by examining individual survey items for the previous two samples. As predicted, the junior enlisted members of COHORT units score significantly higher on the horizontal bonding measures which include both General Social Bonding and Off-Duty Associations. The absolute value of the COHORT scores on these two scales is not high, and in fact drops below neutral on General Social Bonding, but compared to the IRS scores, they are visibly and statistically less negative. The point difference is over nine on General Social Bonding, and an estimated five points on Off-Duty Associations.

With respect to the other measures of unit climate and cohesion in Table 15, there are no significant differences between the COHORT and IRS samples on the Confidence in Officers, Confidence in NCOs, and Caring Leadership scales. However, the COHORT first-termers score significantly higher on Confidence in Weapons and Training, while they score lower than the IRS control group on Military Self-Esteem. On balance, therefore, the differences between the COHORT and IRS samples on the other measures of unit climate are net neutral and we should expect some positive social psychological outcomes for the COHORT company members by virtue of their higher horizontal bonding. We would predict that willingness to go to war and pride in company would be higher for the COHORT sample, and in fact this is what we find by testing these hypotheses on the Would Go to War with Unit and Company Pride scales. Given the results on the vertical cohesion measures and Military Self-Esteem, we did not expect there to be differences on the Cooperation with Leaders and Psychological General Well-Being scales and no significant differences were found.

Table 16 provides a near carbon copy in terms of results pattern to that seen in Table 15, this time for the COHORT company sample in Data Set #4 that was near the end of life cycle. Again we have strong and significant differences on the two horizontal bonding scales in favor of COHORT, no significant differences on the other unit climate measures except on Confidence in Weapons and Training where COHORT scored higher, and the expected positive social psychological outcomes for the COHORT company members on Would Go to War with Unit and Company Pride. The IRS sample results in Table 16 look remarkably similar to the IRS results in Table 15, whereas the COHORT results on all the horizontal cohesion measures, including Would Go to War with Unit and Company Pride, are noticeably higher for the four companies in Table 16 than they were for the nine companies in Table 15. Since the sample of COHORT companies is small and unmatched across Tables, we cannot conclude that horizontal cohesion improves near disestablishment. We would in

TABLE 15
COHORT VS. IRS LINE COMPANY SCALE SCORES FROM DATA SET #3
Post-Deployment COHORT Companies (Mid-to-End of Life Cycle)
Mechanized Infantry, Armor, Field Artillery (Nonmatching BN Samples)
T-Tests for E1-E4s

	COHORT Mean	IRS Mean	T Stat
1. Horizontal Bonding Measures (Hypothesized Effects, One-Tailed Tests)			
General Social Bonding	48.8	39.4	6.2*
Off-Duty Associations	53.9	48.9	3.1*
2. Other Unit Climate Measures (Two-Tailed Tests)			
Confidence in Officers	42.1	41.6	.3
Confidence in NCOs	50.0	51.9	-1.2
Caring Leadership	36.3	38.8	-1.6
Confidence in Weapons and Training	52.0	47.5	3.3*
Military Self-Esteem	58.5	60.9	-2.0*
3. Outcome Measures (Separate Hypotheses)			
Would Go to War with Unit (One-Tailed)	52.1	49.2	1.7*
Company Pride (One-Tailed)	41.6	38.3	2.0*
Cooperation with Leaders (Two-Tailed)	39.7	38.8	.6
Psychological General Well-Being (Two-Tailed)	58.2	55.4	1.9
N	364-404	296-322	
N(Companies/Batteries)	9	8	
N(Battalions)	9	8	

*Statistically Significant Difference at P<.05

N.B. COHORT bns are in USAREUR, IRS bns are in USAREUR and CONUS.

TABLE 16
COHORT VS. IRS LINE COMPANY SCALE SCORES FROM DATA SET #4
Post-Deployment COHORT Companies (End of Life Cycle)
Mechanized Infantry, Armor, Field Artillery (Nonmatching BN Samples)
T-Tests for E1-E4s

	COHORT Mean	IRS Mean	T Stat
1. Horizontal Bonding Measures (Hypothesized Effects, One-Tailed Tests)			
General Social Bonding	59.8	39.3	8.4*
Off-Duty Associations	62.0	48.8	5.3*
2. Other Unit Climate Measures (Two-Tailed Tests)			
Confidence in Officers	43.0	41.9	.4
Confidence in NCOs	54.9	54.6	.1
Caring Leadership	38.5	40.1	-.6
Confidence in Weapons and Training	53.2	47.3	2.8*
Military Self-Esteem	56.5	57.2	.4
3. Outcome Measures (Separate Hypotheses)			
Would Go to War with Unit (One-Tailed)	56.6	48.8	3.0*
Company Pride (One-Tailed)	49.4	38.6	4.0*
Cooperation with Leaders (Two-Tailed)	40.9	40.6	.1
Psychological General Well-Being (Two-Tailed)	61.2	58.9	1.0
N	96-115	171-192	
N(Companies/Batteries)	4	6	
N(Battalions)	4	6	

*Statistically Significant Difference at P<.05

N.B. COHORT bns are in USAREUR, IRS bns are in USAREUR and CONUS.

fact predict the opposite from our interview data. However, these results suggest that a loss in horizontal cohesion is not inevitable in COHORT units near disestablishment, at least when other unit climate conditions are not worse off than in similar IRS units.

In Table 17, we get our first look at beginning of life cycle as well as predeployment COHORT replacement companies and the results are impressive to say the least. The COHORT companies score significantly higher on every one of the unit climate and cohesion scales, and the effects appear to be no more strong on the horizontal bonding measures than they do on the other unit climate measures. Except on Caring Leadership, all of the COHORT scores are above the neutral point. As a result of these positive findings for COHORT across the board, we hypothesized and successfully found that the COHORT soldiers scored higher on all four outcome measures.

The significantly higher results for COHORT companies on the other measures of unit climate were not predicted for Table 17, and we are left with two possible explanations for them. Either this group of ten COHORT companies truly had better than expected leadership and training climates by random chance or the higher scores are a function of the fact that the COHORT soldiers are still early in their life cycle and not long out of OSUT, and therefore likely to give every aspect of their new units the benefit of the doubt. Since we have already seen quite a bit of data from mature COHORT units, we would tend to accept the latter explanation at least until we can compare more early versus late COHORT life cycle data.

Results from the COHORT company sample that had more experience in their units, though were still predeployment, are presented in Table 18. Like Table 17, results on all the scales are significantly higher for the COHORT companies. Consequently, we once again predicted and successfully found that COHORT junior enlisted did better than IRS soldiers on all four outcome measures. The more mature COHORT sample in Table 18, however, has slightly lower scores than the beginning of life COHORT sample in Table 17 on all scales except Confidence in Weapons and Training and Psychological General Well-Being. This means that for the most part the point differences between the COHORT and IRS companies are smaller in Table 18 than they were in Table 17. For example, on Confidence in Officers, the beginning of life cycle COHORT mean is 14.1 points higher than the IRS mean, but for the closer to mid-life cycle COHORT sample the mean is just 8.8 points higher, due almost entirely to a drop in the COHORT mean from 55.7 to 50.7.

With Table 19 and the mid to late life cycle sample of COHORT replacement companies from Data Set #5, we should expect to see results that have become typical for us in terms of fully mature COHORT units. That is in fact what we generally find. Although the IRS means are unexpectedly higher as a rule than they were in either Table 17 or 18, the COHORT means are also by and large lower than they were in Tables 17 and 18. Thus we have no significant differences this time between COHORT and IRS E1-E4s on Confidence in Officers, Caring Leadership, and Military

TABLE 17
COHORT VS. IRS LINE COMPANY SCALE SCORES FROM DATA SET #3
Pre-Deployment COHORT Companies (Beginning of Life Cycle)
Mechanized Infantry, Armor, Field Artillery (Nonmatching BN Samples)
T-Tests for E1-E4s

	COHORT Mean	IRS Mean	T Stat
1. Horizontal Bonding Measures (Hypothesized Effects, One-Tailed Tests)			
General Social Bonding	54.5	39.4	10.8*
Off-Duty Associations	56.7	48.9	5.2*
2. Other Unit Climate Measures (Two-Tailed Tests)			
Confidence in Officers	55.7	41.6	10.0*
Confidence in NCOs	65.0	51.9	8.5*
Caring Leadership	45.9	38.8	4.6*
Confidence in Weapons and Training	55.8	47.5	6.7*
Military Self-Esteem	64.2	60.9	2.8*
3. Outcome Measures (Separate Hypotheses)			
Would Go to War with Unit (One-Tailed)	58.8	49.2	6.2*
Company Pride (One-Tailed)	55.7	38.3	10.5*
Cooperation with Leaders (One-Tailed)	54.1	38.8	11.3*
Psychological General Well-Being (One-Tailed)	60.3	55.4	3.5*
N	508-553	296-322	
N(Companies/Batteries)	10	8	
N(Battalions)	10	8	

*Statistically Significant Difference at P<.05

N.B. COHORT bns are in CONUS, IRS bns are in USAREUR and CONUS.

TABLE 18
COHORT VS. IRS LINE COMPANY SCALE SCORES FROM DATA SET #4
Pre-Deployment COHORT Companies (Early to Mid-Life Cycle)
Mechanized Infantry, Armor, Field Artillery (Nonmatching BN Samples)
T-Tests for E1-E4s

	COHORT Mean	IRS Mean	T Stat
1. Horizontal Bonding Measures (Hypothesized Effects, One-Tailed Tests)			
General Social Bonding	53.1	39.3	8.1*
Off-Duty Associations	55.4	48.8	3.6*
2. Other Unit Climate Measures (Two-Tailed Tests)			
Confidence in Officers	50.7	41.9	5.1*
Confidence in NCOs	62.3	54.6	4.5*
Caring Leadership	44.8	40.1	2.4*
Confidence in Weapons and Training	56.1	47.3	6.0*
Military Self-Esteem	63.1	57.2	4.0*
3. Outcome Measures (Separate Hypotheses)			
Would Go to War with Unit (One-Tailed)	58.4	48.8	5.0*
Company Pride (One-Tailed)	54.1	38.6	7.6*
Cooperation with Leaders (One-Tailed)	50.9	40.6	5.9*
Psychological General Well-Being (One-Tailed)	62.1	58.9	1.9*
N	457-540	171-192	
N(Companies/Batteries)	11	6	
N(Battalions)	10	6	

*Statistically Significant Difference at P<.05

N.B. COHORT bns are in CONUS, IRS bns are in USAREUR and CONUS.

TABLE 19
COHORT VS. IRS LINE COMPANY SCALE SCORES FROM DATA SET #5
Mid to Late Life Cycle COHORT Companies
Mechanized Infantry, Armor, Field Artillery (Nonmatching BN Samples)
T-Tests for E1-E4s

	COHORT Mean	IRS Mean	T Stat
1. Horizontal Bonding Measures (Hypothesized Effects, One-Tailed Tests)			
General Social Bonding	50.8	44.3	4.4*
Off-Duty Associations	55.5	51.2	2.8*
2. Other Unit Climate Measures (Two-Tailed Tests)			
Confidence in Officers	46.2	46.8	-.4
Confidence in NCOs	58.0	55.0	2.0*
Caring Leadership	44.8	45.7	-.6
Confidence in Weapons and Training	55.1	52.1	2.6*
Military Self-Esteem	59.8	61.6	-1.4
3. Outcome Measures (Separate Hypotheses)			
Would Go to War with Unit (One-Tailed)	56.6	52.4	2.7*
Company Pride (One-Tailed)	50.8	47.6	1.8*
Cooperation with Leaders (Two-Tailed)	47.6	46.9	.5
Psychological General Well-Being (Two-Tailed)	60.3	63.4	-2.3*
N	412-505	281-383	
N(Companies/Batteries)	11	10	
N(Battalions)	10	9	

*Statistically Significant Difference at P<.05

N.B. Both COHORT and IRS bns are in CONUS and USAREUR.

Self-Esteem. Importantly, however, there are still significant differences in the predicted direction on the two horizontal bonding scales (General Social Bonding and Off-Duty Associations). Because the differences between the COHORT and IRS samples on the other measures of unit climate are still net positive due to higher COHORT Confidence in NCOs and Confidence in Weapons and Training scores, we hypothesized and successfully found that the COHORT soldiers scored higher than the IRS controls on Would Go to War with Unit and Company Pride. No hypotheses were made regarding Cooperation with Leaders and Psychological General Well-Being because of the lack of significant COHORT vs. IRS differences on Military Self-Esteem and some of the vertical cohesion scales.[1]

Although we have too few companies that we can match across time in order to perform longitudinal analyses, the cross-sectional results presented in Tables 17, 18, and 19 do allow us to draw some tentative inferences about changes in COHORT scale scores attendant on stage in the life cycle. Table 20 simply lays out the COHORT scores on the two horizontal bonding measures (General Social Bonding and Off-Duty Associations) and two of the vertical cohesion measures (Confidence in Officers and Confidence in NCOs) across three points in time (Data Sets #3,4,&5) for the sample that was at the beginning of life cycle at the time Data Set #3 was collected. We see that all four scale scores tend to decline with later stages of the life cycle, but the decline is not as severe on the horizontal bonding measures as it is on the vertical cohesion measures. Confidence in Officers falls 9.5 points (from 55.7 to 46.2) across the three life cycle samples, Confidence in NCOs falls 7.0 points (from 65.0 to 58.0), while General Social Bonding falls just 3.7 points (from 54.5 to 50.8) and Off-Duty Associations barely changes at all (from 56.7 to 55.5).[2]

If we look at Tables 15 and 16 again, we find that it is not unusual for vertical cohesion scores in mid to late life cycle COHORT companies to be even lower than they are for the mature COHORT sample in Table 19. Specifically we see that Confidence in Officers scores in those two tables run from 42.1 to 43.0, Confidence in NCOs scores from 50.0 to 54.9, and Caring Leadership from 36.3 to 38.5. For the mature COHORT samples in Tables 15, 16, and 19, therefore, the vertical cohesion scores are generally the same or below those from the IRS control samples and the overall population (Table 13). However, the COHORT horizontal bonding scores remain significantly higher than the IRS controls for all three mature COHORT samples, and certainly substantially higher than the IRS controls for the less

[1]The significant effect in favor of the IRS sample on Psychological General Well-Being was not expected. The COHORT GWB score of 60.3, however, is not below the population norm of 60.1 (see Appendix C).

[2]We are comfortable in comparing these scale score changes since the mean standard deviations of the four scales are 19.7, 21.3, 20.6, and 21.0 respectively (see Table 13).

TABLE 20
COHORT LINE COMPANY SCALE SCORES FROM THREE STAGES OF UNIT LIFE CYCLE
Data From Tables 17, 18, & 19
Mechanized Infantry, Armor, Field Artillery (Nonmatching Over Time)

	LIFE CYCLE STAGE		
	Beginning	Early-Mid	Mid-Late
1. Horizontal Cohesion Measures			
General Social Bonding	54.5	53.1	50.8
Off-Duty Associations	56.7	55.4	55.5
2. Vertical Cohesion Measures			
Confidence in Officers	55.7	50.7	46.2
Confidence in NCOs	65.0	62.3	58.0
N	508-553	457-540	412-505
N(Companies/Batteries)	10	11	11

KEY TO COHORT COMPANY REPLACEMENT SAMPLES

Beginning=Beginning of Life Cycle (from Data Set #3)
Early-Mid=Early to Mid-Life Cycle (from Data Set #4)
Mid-Late= Mid to Late Life Cycle (from Data Set #5)

N.B. Scale score differences between Beginning of Life Cycle and Mid to Late Life Cycle samples are statistically significant at $P<.05$ except for Off-Duty Associations.

mature COHORT units (Tables 17 and 18).

Subsequent Company Replacement Model Samples-Conclusions

Our goals for this third and final analysis of the COHORT company replacement model have been achieved. We were able to construct scale measures for the various dimensions of unit climate and cohesion such that we could test hypotheses like those we used to evaluate the first and second round of deployed COHORT units. For the most part, we found predictable results with scale scores that were analogous to the findings from the previous individual item analyses. The COHORT units this time were not matched one-to-one with same battalion IRS control units, but we continued to find that COHORT soldiers scored higher on measures of horizontal bonding than IRS soldiers from similar kinds of combat arms line units, i.e. mechanized infantry, armor, and field artillery.

The hypothesis that horizontal cohesion is higher in COHORT companies was sustained for both the General Social Bonding scale, which taps closeness and teamwork at the unit or company level, and the Off-Duty Associations scale, which measures after-duty interactions, friendships, and peer support mainly at the squad and platoon level. Furthermore, this hypothesis was successfully upheld in five separate sample comparisons regardless of the point in the unit life cycle at which the COHORT companies and batteries were surveyed.

As with the first and second round deployed COHORT units, these five samples of subsequent COHORT replacement companies demonstrated positive social psychological outcomes vis-a-vis IRS control units when differences on the other measures of unit climate (i.e. not horizontal bonding) were net neutral or net positive. This turned out to be the case for all five COHORT company samples. For the beginning of life cycle and early to mid-life cycle samples, COHORT scored significantly higher on all the cohesion and unit climate measures. For the three mature COHORT samples, results were much more like those for the first and second round post-deployment COHORT companies, i.e. with a fair number of nonsignificant differences with the IRS companies on the other (not horizontal bonding) measures of unit climate.

We attributed the across-the-board positive effects of early life cycle COHORT units to the optimistic expectations COHORT soldiers initially carry with them into the unit. While all COHORT scale scores appear to decline as the life cycle progresses, the scores on measures of vertical cohesion and

perceptions of leaders seem to fall most dramatically. Scores on horizontal cohesion wane more slightly, and positive differences vis-a-vis the IRS units are sustained on these measures.

Company Replacement Model-Overall Conc 'sions[1]

1. Across seven different samples of COHORT replacement companies and batteries, horizontal bonding and cohesion were significantly higher among the COHORT soldiers than among IRS soldiers in companies and batteries from the same or similiar combat arms battalions. By horizontal bonding and cohesion we mean a shared knowledge about who fellow unit members are based on common group experience, the formation of supportive friendships in the unit that extend beyond the duty day, a concern for the welfare of fellow unit members, and a general sense of group tightness, closeness, teamwork, and solidarity.

2. The positive effect of COHORT unit status on horizontal bonding was found whether looking at individual survey items or scale scores, and regardless of what stage in the life cycle the COHORT companies and batteries were surveyed. Never did an IRS control sample score higher than a COHORT unit sample on a horizontal cohesion scale or survey item. COHORT NCOs also display higher horizontal cohesion than IRS NCOs.

3. There are no consistently significant differences between COHORT and IRS unit samples on other measures of unit climate and cohesion related to confidence in officers, NCOs, training, weapons, and self. Sometimes the COHORT sample is significantly higher than the IRS sample on such measures, sometimes lower, but usually there are no significant differences between the samples. Where there are differences, therefore, we conclude that they are caused by phenomena other than COHORT itself. The significantly positive effect of COHORT on horizontal bonding appears to be greater when the differences between the COHORT and IRS samples on the other unit climate and cohesion measures are roughly equal (net neutral) or net positive (favoring COHORT).

[1]Except where noted, the following conclusions apply to junior enlisted in combat arms line companies, almost exclusively in CMFs 11, 13, and 19, Skill Level 10. COHORT soldiers were OSUT-trained, however no claims are made regarding actual personnel stabilization achieved over the unit life cycle in any particular COHORT company or battery, especially with respect to NCO and officer turnover.

4. Because these other measures of unit climate and cohesion are correlated with the horizontal bonding measures, in the minority of cases where the differences on the other measures are net negative between an individual COHORT and IRS unit in the same battalion (i.e. favoring the IRS unit), there may be few or no significant differences on horizontal bonding favoring the COHORT unit. Almost without exception, however, the IRS unit under such circumstances will still fail to score significantly higher than the COHORT unit on any of the measures of horizontal bonding.

5. The higher horizontal bonding in the COHORT samples vis-a-vis IRS control samples leads to significantly more positive social psychological unit outcomes like company pride and willingness to go to war with fellow unit members. However, because horizontal bonding measures and the other measures of unit climate and cohesion are both correlated with positive social psychological unit outcomes, this occurs only when the COHORT sample is net neutral or net positive with respect to the IRS sample on the other measures of unit climate and cohesion. The same phenomenon is seen when comparing a single COHORT company with an IRS company in the same battalion.

6. COHORT scores appear to be elevated and significantly higher than IRS scores on all measures of unit climate and cohesion early in the unit life cycle. Scores decline with later stages of the life cycle, but the declines are more steep for the measures of vertical cohesion than horizontal cohesion. Across all stages of the life cycle surveyed, significant positive differences with IRS control samples are sustained only for the measures of horizontal cohesion.

7. Ranger battalion scores on all unit climate and cohesion scales are significantly above those in both COHORT and IRS unit samples. However, at least on horizontal cohesion measures, COHORT units are generally at or above the neutral point whereas IRS units are generally below.

APPENDIX A
DESCRIPTION OF DATA SETS

DATA SET NUMBER: 1
SAS DATA SET NAME: COHORT.COMBINED.MSTR
INTERNAL NAME: SASED.COHORT

DATA COLLECTION DATES: 1983

NUMBER OF COMPANIES/BATTERIES SURVEYED: 32
TOTAL NUMBER OF SOLDIERS: 2095
NUMBER OF E1-E4s: 1673
NUMBER OF E5-E8s: 367
NUMBER OF O1-O3s: 55

NUMBER OF VARIABLES: 84
VARIABLE CLASSIFICATIONS: Demographics
Company Perceptions*
Squad/Platoon Perceptions (E1-E4s)**
General Well-Being

UNIT CLASSIFICATIONS:

9 Mid-Life Cycle COHORT Line Companies (First Round)
Deployed in 9 Different Battalions in USAREUR:
3 Mechanized Infantry, 3 Armor, 3 Field Artillery

9 IRS Line Companies Matched to the Above by Battalion

6 Companies Comprising an OCONUS Airborne Battalion
Including 1 COHORT Line Company

8 IRS Companies Comprising 2 CONUS Airborne Battalions

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*Original 32 item version.
**Original 14 item, 3 response category version.

DATA SET NUMBER: 2
SAS DATA SET NAME: MARLOWE.COHORT2
INTERNAL NAME: SASED.COHORT2

DATA COLLECTION DATES: 1984

NUMBER OF COMPANIES/BATTERIES SURVEYED: 13
TOTAL NUMBER OF SOLDIERS: 806
NUMBER OF E1-E4s: 555
NUMBER OF E5-E8s: 223
NUMBER OF O1-O3s: 28

NUMBER OF VARIABLES: 528
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Perceptions
- Unit Cohesion and Morale
- General Well-Being
- Modified Field Forces Questionnaire*
- Social Support
- Semantic Differentials:
  - Best Buddy
  - Yourself
  - Company/Battery Commander
  - Platoon/Firing Battery Sergeant
  - First Sergeant
  - Platoon Leader or XO (Artillery)
  - Squad Leader, Tank Commander, or Gun Chief
  - Average Soldier in Your Unit
- Spouse Demographics

UNIT CLASSIFICATIONS:

6 Mid-Life Cycle COHORT Line Companies (Second Round) Deployed in 6 Different Battalions in USAREUR:
2 Mechanized Infantry, 2 Armor, 2 Field Artillery

6 IRS Line Companies Matched to the Above by Battalion

1 COHORT Line Company Deployed in an CCONUS Airborne Battalion

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*Original 39 item version with individual-item response categories.

DATA SET NUMBER: 3
SAS DATA SET NAME: FIRST12.SASED.NONINES
INTERNAL NAME: FIRST12.FIRST12

DATA COLLECTION DATES: MAY 1985-DECEMBER 1985

NUMBER OF COMPANIES/BATTERIES SURVEYED: 104
TOTAL NUMBER OF SOLDIERS: 9597
NUMBER OF E1-E4s: 6430
NUMBER OF E5-E8s: 2659
NUMBER OF O1-O3s: 416

NUMBER OF VARIABLES: 309
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Descriptions
  (e.g. IET Together, Work Hours, New Personnel, Time in Field)
- Company Perceptions
- Unit Cohesion and Morale
- General Well-Being
- Reenlist Int .tion/Want Out of Army
- Reasons to Reenlist/Not to Reenlist
- Modified Field Forces Questionnaire
- Squad/Platoon Perceptions (E1-E4s)
- Social Support
- Spouse Demographics
- Life Satisfaction (Married)
- Army Satisfaction (Married)
- Social Support for Spouse
  (Married, Living with Spouse)
- Psychological Sense of Community
  (Married, Living with Spouse)

UNIT CLASSIFICATIONS:

4 COHORT Battalions, Beginning of Life Cycle in CONUS:
1 Mechanized Infantry, 1 Airborne Infantry, 1 Armor, 1 Field Artillery
2 "Sister" COHORT (Personnel-Stabilized) Battalions in USAREUR:
1 Mechanized Infantry, 1 Armor
6 IRS Battalions Matched by Post and Battalion Type to the Above

4 COHORT Light Infantry Battalions, Beginning of Life Cycle in CONUS, Nonrotating, 1 Field Artillery Battalion

9 COHORT Mid to End of Life Cycle Line Companies in 9 Different Battalions in USAREUR. (Includes one company in the IRS Mechanized Infantry battalion in USAREUR above.)
10 COHORT Beginning of Life Cycle Line Companies in 10 Different Battalions in CONUS
8 IRS Line Companies in 8 Different Battalions Including Mechanized Infantry, Armor, and Field Artillery Units in USAREUR and CONUS. (No one-to-one battalion match to the 19 independent COHORT companies.)

DATA SET NUMBER: 4
SAS DATA SET NAME: SECOND10.SASED.NONINES
INTERNAL NAME: SECOND10.SECOND10
DATA COLLECTION DATES: DECEMBER 1985-MAY 1986

NUMBER OF COMPANIES/BATTERIES SURVEYED: 107
TOTAL NUMBER OF SOLDIERS: 9244
NUMBER OF E1-E4s: 5985
NUMBER OF E5-E8s: 2678
NUMBER OF O1-O3s: 434

NUMBER OF VARIABLES: 296
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Descriptions
  (e.g. IET Together, Work Hours, New Personnel, Time in Field)
- Company Perceptions
- Unit Cohesion and Morale
- General Well-Being
- Reenlist Intention/Want Out of Army
- Modified Field Forces Questionnaire
- Squad/Platoon Perceptions (E1-E4s)
- Social Support
- Army Satisfaction
- Spouse Demographics
- Life Satisfaction (Married)
- Social Support for Spouse
  (Married, Living with Spouse)
- Psychological Sense of Community
  (Married, Living with Spouse)
- Battalion Headquarters Perceptions
  (Battalion Staff)
- Written Comments (These are coded within a separate data file.)

UNIT CLASSIFICATIONS:

4 COHORT Battalions, Pre-Rotation in CONUS:
1 Mechanized Infantry, 1 Airborne Infantry, 1 Armor, 1 Field Artillery
4 "Sister" COHORT (Personnel-Stabilized) Battalions, Pre-Rotation in USAREUR, Matched by Unit Type to the Above
6 IRS Battalions Matched by Post and Battalion Type to the Above (No match for USAREUR Airborne Infantry or Field Artillery.)
4 COHORT Light Infantry Battalions, Pre-Mid Life Cycle in CONUS, Nonrotating, 1 Field Artillery Battalion
4 COHORT End of Life Cycle Line Companies in 4 Different Battalions in USAREUR
11 COHORT Early to Mid-Life Cycle Line Companies in 10 Different Battalions in CONUS
6 IRS Line Companies in 6 Different Battalions Including Mechanized Infantry, Armor, and Field Artillery Units in USAREUR and CONUS. (No one-to-one battalion match to the 15 independent COHORT companies).

DATA SET NUMBER: 5
SAS DATA SET NAME: THIRD10.SASED.NONINES
INTERNAL NAME: THIRD10.THIRD10
DATA COLLECTION DATES: JULY 1986-DECEMBER 1986
NUMBER OF COMPANIES/BATTERIES SURVEYED: 112
TOTAL NUMBER OF SOLDIERS: 10211
NUMBER OF E1-E4s: 6299
NUMBER OF E5-E8s: 3196
NUMBER OF O1-O3s: 535
NUMBER OF VARIABLES: 358
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Descriptions
  (e.g. IET Together, Work Hours, New Personnel, Time in Field)
- Company Perceptions
- Unit Cohesion and Morale
- General Well-Being
- Reenlist Intention/Want Out of Army
- Modified Field Forces Questionnaire
- Squad/Platoon Perceptions (E1-E4s)
- Social Support
- Battalion Rotation/PCS Experience
- Identification with Battalion
- Buddy Counts/Unit Knowledge (E1-E4s)
- Spouse Demographics
- Life Satisfaction (Married)
- Social Support for Spouse
  (Married, Living with Spouse)
- Psychological Sense of Community
  (Married, Living with Spouse)
- Battalion Headquarters Perceptions
  (Battalion Staff)
- August 1988 TAPA Data (Reenlistment, AFQT Score, PULHES, ETS Date)

UNIT CLASSIFICATIONS:

4 COHORT Battalions, Post-Rotation to USAREUR:
1 Mechanized Infantry, 1 Airborne Infantry, 1 Armor, 1 Field Artillery

4 "Sister" COHORT (Personnel-Stabilized) Battalions, Post-Rotation with the Above to CONUS

7 IRS Battalions Matched by Post and Battalion Type to the Above (USAREUR Field Artillery Match is at a Different Post; No Match for USAREUR Airborne Infantry.)

4 COHORT Light Infantry Battalions, Mid-Life Cycle in CONUS, Nonrotating, 1 Field Artillery Battalion

11 COHORT Mid to Late Life Cycle Line Companies in 10 Different Battalions (7 USAREUR, 3 CONUS). Includes 1 Company Included in the IRS CONUS Field Artillery Battalion Above

10 IRS Line Companies in 9 Different Battalions Including Mechanized Infantry, Armor, and Field Artillery Units in USAREUR and CONUS. (No one-to-one battalion match to the 11 independent COHORT companies; also includes 1 company included in the IRS CONUS Field Artillery battalion above.)

DATA SET NUMBER: 6
SAS DATA SET NAME: FOURTH11.SASED.NONINES
INTERNAL NAME: FOURTH11.FOURTH11
DATA COLLECTION DATES: MARCH 1987-SEPTEMBER 1987
NUMBER OF COMPANIES/BATTERIES SURVEYED: 90
TOTAL NUMBER OF SOLDIERS: 8450
NUMBER OF E1-E4s: 5249
NUMBER OF E5-E8s: 2693
NUMBER OF O1-O3s: 435

NUMBER OF VARIABLES: 452
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Descriptions
  (e.g. IET Together, Work Hours, New Personnel, Time in Field)
- Company Perceptions
- Unit Cohesion and Morale
- Unit Climate Profile Questionnaire
- General Well-Being
- Reenlist Intention/Want Out of Army
- Modified Field Forces Questionnaire
- Squad/Platoon Perceptions (E1-E4s)
- Social Support
- Identification with Battalion
- Buddy Counts/Unit Knowledge (E1-E4s)
- Army Satisfaction: General & Married
- Life Satisfaction: General & Married
- Locus of Control I and II
- Coping Skills
- Personality Hardiness
- Priorities for Combat Success
- Spouse Demographics
- Social Support for Spouse
  (Married, Living with Spouse)
- Psychological Sense of Community
  (Married, Living with Spouse)
- Battalion Headquarters Perceptions
  (Battalion Staff)
- August 1988 TAPA Data (Reenlistment, AFQT Score, PULHES, ETS Date)
- Written Comments (These are coded within a separate data file.)

UNIT CLASSIFICATIONS:
4 COHORT Battalions, Late-Life Cycle Having Rotated to USAREUR:
1 Mechanized Infantry, 1 Airborne Infantry, 1 Armor,
1 Field Artillery
4 "Sister" COHORT (Personnel-Stabilized) Battalions,
Late-Life Cycle Having Rotated with the Above to CONUS
6 IRS Battalions Matched by Post and Battalion Type to the Above
(USAREUR Field Artillery Match is at a Different Post;
No Match for USAREUR Airborne Infantry or Armor.)
4 COHORT Light Infantry Battalions, Late-Life Cycle in CONUS,
Nonrotating, 1 Battalion Pre-MFO Deployment, 1 FA BN

DATA SET NUMBER: 7
SAS DATA SET NAME: FIFTH03.SASED.NONINES
INTERNAL NAME: FIFTH03.FIFTH03
DATA COLLECTION DATES: OCTOBER 1987-FEBRUARY 1988
NUMBER OF COMPANIES/BATTERIES SURVEYED: 43
TOTAL NUMBER OF SOLDIERS: 2355
NUMBER OF E1-E4s: 1423
NUMBER OF E5-E8s: 785
NUMBER OF O1-O3s: 125

NUMBER OF VARIABLES: 352
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Descriptions
  (e.g. IET Together, Work Hours, New Personnel, Time in Field, Field Exercise Performance, Cohesion and Cohesion Change)
- Personnel Replacement Packages
- Army Data Self-Reports (e.g., SQT, PT, GT Scores; EIB, Weapons Qualification, Medical Profile)
- Overall Health Assessment
- Modified Hopkins Symptoms Checklist
- Bradburn Symptoms Checklist
- Company Perceptions
- Unit Cohesion and Morale
- Unit Climate Profile Questionnaire
- General Well-Being
- Reenlist Intention/Want Out of Army
- Modified Field Forces Questionnaire
- Squad/Platoon Perceptions (E1-E4s)
- Buddy Counts/Unit Knowledge (E1-E4s)
- Social Support
- Army Satisfaction: General & Married
- Life Satisfaction: General & Married
- Spouse Demographics
- Marital/Family Priority (Married)
- Social Support for Spouse (Married, Living with Spouse)
- Psychological Sense of Community (Married, Living with Spouse)
- Written Comments (These are coded within a separate data file.)

UNIT CLASSIFICATIONS:
(Only line companies were surveyed in the following battalions.)

2 COHORT Battalions, End of Life Cycle Having Rotated to USAREUR:
1 Mechanized Infantry, 1 Armor
2 "Sister" COHORT (Personnel-Stabilized) Battalions,
Reloading Having Rotated with the Above to CONUS
4 IRS Battalions Matched by Post and Battalion Type to the Above

4 COHORT Light Infantry Battalions, End of Life Cycle in CONUS,
Nonrotated, 1 Battalion Post-MFO Deployment, 1 FA BN

DATA SET NUMBER: 8
SAS DATA SET NAME: TERRY.SF2.SASED
INTERNAL NAME: SASED.TERRY
DATA COLLECTION DATES: JULY 1987

NUMBER OF COMPANIES/BATTERIES SURVEYED: 4
TOTAL NUMBER OF SOLDIERS: 229
NUMBER OF E1-E4s: 178
NUMBER OF E5-E8s: 35
NUMBER OF O1-O3s: 13

NUMBER OF VARIABLES: 167
VARIABLE CLASSIFICATIONS:

- Demographics
- Company Descriptions
  (e.g. Work Hours, Time in Field, Down Time, Home When Expected)
- Company Perceptions
- Unit Cohesion and Morale
- Command Climate Questionnaire
- Want Out of Army
- Modified Field Forces Questionnaire
- Squad/Platoon Perceptions (E1-E4s)
- Unit Knowledge Regarding Medics and Other Line Companies' Support
- Officer Professionalism
- Conflict Between Family and Job/Army (Married)

UNIT CLASSIFICATIONS:

1 Ranger Battalion in CONUS, Line Companies Only

APPENDIX B

UNIT COHESION AND MORALE (U)

In this next section, we ask you several questions about your feelings toward your equipment and your unit. Read each statement carefully, and then circle the number corresponding to the answer that best describes your feeling.

	VERY HIGH	HIGH	MODERATE	LOW	VERY LOW	
1. What is the level of morale in your company?	1	2	3	4	5	(109)
2. How would you describe your company's readiness for combat?	1	2	3	4	5	(110)
3. How would you describe your fellow soldiers' readiness to fight if and when it is necessary?	1	2	3	4	5	(111)

In the event of combat, how would you describe <u>your confidence</u> in the following:

	VERY HIGH	HIGH	MODERATE	LOW	VERY LOW	
4. your platoon leader	1	2	3	4	5	(112)
5. your Company Commander	1	2	3	4	5	(113)
6. your crew/squad members	1	2	3	4	5	(114)
7. yourself	1	2	3	4	5	(115)

How would you describe <u>your confidence</u> in the tactical decisions of the following:

	VERY HIGH	HIGH	MODERATE	LOW	VERY LOW	
8. your Battalion Commander	1	2	3	4	5	(116)
9. your Brigade Commander	1	2	3	4	5	(117)
10. your Division Commander	1	2	3	4	5	(118)
11. your Corps Commander	1	2	3	4	5	(119)
12. the Army General Staff	1	2	3	4	5	(120)
13. How much confidence do you have in your unit's major weapons systems (tanks, APCs, etc.)?	1	2	3	4	5	(121)

	VERY HIGH	HIGH	MODERATE	LOW	VERY LOW	
14. How would you rate your own skills and abilities as a soldier (using your weapons, operating and maintaining your equipment, etc.)?	1	2	3	4	5	(122)
15. How would you describe your unit's togetherness, or how "tight" are members of your unit?	1	2	3	4	5	(123)
16. What is the level of your personal morale?	1	2	3	4	5	(124)

17. How would you describe the condition of your unit's major weapons systems (tanks, APCs, etc.)? In other words, what kind of shape are they in?
    1. VERY GOOD
    2. GOOD
    3. SO-SO
    4. BAD
    5. VERY BAD (125)

18. The relationships between officers and the enlisted in your unit are:
    1. VERY GOOD
    2. GOOD
    3. SO-SO
    4. BAD
    5. VERY BAD (126)

19. How often do you worry about what might happen to you personally, if and when your unit goes into combat?
    1. ALWAYS
    2. OFTEN
    3. SOMETIMES
    4. RARELY
    5. NEVER (127)

MODIFIED FIELD FORCES QUESTIONNAIRE (F)

We would like to know your opinions toward others in your unit. Read each statement carefully, and then circle the number corresponding to the answer that best describes how you feel. There are five possible answers; these are:

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
1	2	3	4	5

1.	I am proud to be in the Army.	1	2	3	4	5	(128)
2.	I am proud of my company.	1	2	3	4	5	(129)
3.	I really feel that I belong in my company.	1	2	3	4	5	(130)
4.	I am an important part of my company.	1	2	3	4	5	(131)
5.	There is a lot of teamwork and cooperation among soldiers in my company.	1	2	3	4	5	(132)
6.	Officers most always get willing and whole-hearted cooperation from soldiers.	1	2	3	4	5	(133)
7.	NCOs most always get willing and whole-hearted cooperation from soldiers.	1	2	3	4	5	(134)
8.	Outside normal company duties, soldiers in my company would do most anything for their officers.	1	2	3	4	5	(135)
9.	Outside normal company duties, soldiers in my company would do most anything for their NCOs.	1	2	3	4	5	(136)
10.	What I do in the Army is worthwhile.	1	2	3	4	5	(137)
11.	I get praise and recognition when I do a particularly good job.	1	2	3	4	5	(138)
12.	In my company, the best soldiers get the "breaks."	1	2	3	4	5	(139)
13.	On the whole, the Army gives me a chance to "be all I can be."	1	2	3	4	5	(140)
14.	The equipment of the American Army is better than that of the Russian Army.	1	2	3	4	5	(141)

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
1	2	3	4	5

15. My company will play a part in winning future conflicts.	1	2	3	4	5	(142)
16. I have enough time to take care of my personal needs such as going to medical appointments, commissary shopping, going to the cleaners, getting a hair cut, and things like that.	1	2	3	4	5	(143)
17. I have enough time for relaxation and entertainment.	1	2	3	4	5	(144)
18. I have enough time to spend with family members and friends.	1	2	3	4	5	(145)
19. I often have good ideas but my leaders never consider them.	1	2	3	4	5	(146)
20. It's worthwhile to make suggestions to my leaders.	1	2	3	4	5	(147)
21. My unit is really "messed up."	1	2	3	4	5	(148)
22. Compared to other units, it's difficult to get something done in my unit.	1	2	3	4	5	(149)
23. When I first arrived, leaders helped me a lot to get settled.	1	2	3	4	5	(150)
24. My leaders are better than the leaders of other units.	1	2	3	4	5	(151)
25. My unit is better than other units in getting the job done.	1	2	3	4	5	(152)

COMPANY PERCEPTIONS (P)

Now, we would like to ask you some more questions about your unit. Below appear statements that you can agree or disagree with. Carefully read each statement and then circle the number to the right of the statement that best describes your feeling. There are five numbers corresponding to five possible answers; these are:

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
1	2	3	4	5

1.	This company is one of the best in the US Army.	1	2	3	4	5	(189)
2.	People in this company feel very close to each other.	1	2	3	4	5	(190)
3.	The officers in this company really seem to know their stuff.	1	2	3	4	5	(191)
4.	I think this company would do a better job in combat than most other Army units.	1	2	3	4	5	(192)
5.	The soldiers I work with always try to do a good job.	1	2	3	4	5	(193)
6.	The NCOs in this company really seem to know their stuff.	1	2	3	4	5	(194)
7.	I really know the people I work with.	1	2	3	4	5	(195)
8.	There are many people in this company who are just out for themselves and don't care about others.	1	2	3	4	5	(196)
9.	I spend my after-duty hours with people in this company.	1	2	3	4	5	(197)
10.	My closest friendships are with the people I work with.	1	2	3	4	5	(198)
11.	The officers in this company don't spend enough time with troops.	1	2	3	4	5	(199)
12.	I am impressed by the quality of leadership in this company.	1	2	3	4	5	(200)

	Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree	
	1	2	3	4	5	
13. If I have to go to war, the soldiers I regularly work with are the ones I want with me.	1	2	3	4	5	(201)
14. The NCOs in this company don't spend enough time with the troops.	1	2	3	4	5	(202)
15. I really like the work I do.	1	2	3	4	5	(203)
16. I think this company's job is one of the most important in the Army.	1	2	3	4	5	(204)
17. I would go for help with a personal problem to people in the company chain-of-command.	1	2	3	4	5	(205)
18. I have a lot of confidence in our weapons.	1	2	3	4	5	(206)
19. I have real confidence in our company's ability to use our weapons.	1	2	3	4	5	(207)
20. I think the level of training in this company is very high.	1	2	3	4	5	(208)
21. If I have to go into combat, I have a lot of confidence in myself.	1	2	3	4	5	(209)
22. In this company, people of different races mix during duty hours.	1	2	3	4	5	(210)
23. In this company, people of different races mix after duty hours.	1	2	3	4	5	(211)
24. Most of the people in this company can be trusted.	1	2	3	4	5	(212)
25. I want to spend my entire enlistment in this company.	1	2	3	4	5	(213)
26. My superiors make a real attempt to treat me as a person.	1	2	3	4	5	(214)
27. People in my company would support me in difficult situations.	1	2	3	4	5	(215)
28. As time goes on, people in this company will get even tighter.	1	2	3	4	5	(216)

	Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree	
	1	2	3	4	5	
29. I like being in this company.					1 2 3 4 5	(217)
30. In this company, you don't have to watch your belongings.					1 2 3 4 5	(218)
31. In this company, people really look out for each other.					1 2 3 4 5	(219)
32. I think we are better trained than most other companies in the Army.					1 2 3 4 5	(220)
33. The officers in this company would lead well in combat.					1 2 3 4 5	(221)
34. The NCOs in this company would lead well in combat.					1 2 3 4 5	(222)
35. Soldiers in this company have enough skills that I would trust them with my life in combat.					1 2 3 4 5	(223)

SQUAD/PLATOON PERCEPTIONS (S)

E4s AND BELOW COMPLETE THIS SECTION.

The questions below ask you about your feelings toward your squad and platoon. Read each statement carefully, and then circle the number corresponding to the answer that best describes how you feel. There are five possible answers; these are:

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
1	2	3	4	5

1.	I like being in this platoon.	1	2	3	4	5	(224)
2.	I like being in this squad.	1	2	3	4	5	(225)
3.	I spend a lot of time with members of my squad after duty hours.	1	2	3	4	5	(226)
4.	I spend a lot of time with members of my platoon after duty hours.	1	2	3	4	5	(227)
5.	After duty hours, blacks tend to hang out with blacks, and whites with whites, and so on.	1	2	3	4	5	(228)
6.	My squad leader is often included in after-duty activities of other squad members.	1	2	3	4	5	(229)
7.	I can go to most people in my squad for help when I have a personal problem, like being in debt.	1	2	3	4	5	(230)
8.	I can go to most people in my platoon for help when I have a personal problem, like being in debt.	1	2	3	4	5	(231)
9.	Most people in my squad would lend me money in an emergency.	1	2	3	4	5	(232)
10.	Most people in my platoon would lend me money in an emergency.	1	2	3	4	5	(233)
11.	My platoon sergeant talks to me personally outside normal duties.	1	2	3	4	5	(234)

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
1	2	3	4	5

12. My platoon leader talks to me personally outside normal duties.	1	2	3	4	5	(235)
13. The company commander talks to me personally outside normal duties.	1	2	3	4	5	(236)
14. My officers are interested in my personal welfare.	1	2	3	4	5	(237)
15. My NCOs are interested in my personal welfare.	1	2	3	4	5	(238)
16. My officers are interested in what I think and how I feel about things.	1	2	3	4	5	(239)
17. My NCOs are interested in what I think and how I feel about things.	1	2	3	4	5	(240)
18. My squad leader knows his(her) stuff.	1	2	3	4	5	(241)
19. My platoon sergeant knows his(her) stuff.	1	2	3	4	5	(242)
20. My platoon leader knows his(her) stuff.	1	2	3	4	5	(243)
21. If we went to war tomorrow, I would feel good about going with my squad.	1	2	3	4	5	(244)
22. If we went to war tomorrow, I would feel good about going with my platoon.	1	2	3	4	5	(245)
23. Most soldiers in my platoon would do a good job if they were given a squad of soldiers and told to take charge of them in a combat mission under enemy fire.	1	2	3	4	5	(246)
24. Officers in my company are the kind I would want to serve under in combat.	1	2	3	4	5	(247)
25. NCOs in my company are the kind I would want to serve under in combat.	1	2	3	4	5	(248)
26. My leaders expect too much from me.	1	2	3	4	5	(249)
27. Most company leaders have confidence in my abilities.	1	2	3	4	5	(250)
28. My chain-of-command works well.	1	2	3	4	5	(251)

WELL-BEING AND INTERPERSONAL SUPPORT (W)

Now we would like to ask you questions about stresses and strains which you may have experienced lately. We also ask you about those people who help you when you have personal problems. Read each question below carefully, and then circle the number corresponding to the answer that best describes how you feel.

1. During the past month, how have you been feeling in general?
   1. IN EXCELLENT SPIRITS
   2. IN VERY GOOD SPIRITS
   3. IN GOOD SPIRITS MOSTLY
   4. I HAVE BEEN UP AND DOWN IN SPIRITS A LOT
   5. IN LOW SPIRITS MOSTLY
   6. IN VERY LOW SPIRITS (153)

2. During the past month, have you been bothered by nervousness or your "nerves?"
   1. EXTREMELY SO, TO THE POINT WHERE I COULD NOT WORK OR TAKE CARE OF THINGS
   2. VERY MUCH SO
   3. QUITE A BIT
   4. SOME, ENOUGH TO BOTHER ME
   5. A LITTLE
   6. NOT AT ALL (154)

3. During the past month, have you been in firm control of your behavior, thoughts, emotions, or feelings?
   1. YES, DEFINITELY SO
   2. YES, FOR THE MOST PART
   3. GENERALLY SO
   4. NOT TOO WELL
   5. NO, AND I AM SOMEWHAT DISTURBED
   6. NO, AND I AM VERY DISTURBED (155)

4. During the past month, have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile?
   1. EXTREMELY SO, TO THE POINT I HAVE JUST GIVEN UP
   2. VERY MUCH SO
   3. QUITE A BIT
   4. SOME, ENOUGH TO BOTHER ME
   5. A LITTLE BIT
   6. NOT AT ALL (156)

5. During the past month, have you been under or felt you were under any strain, stress, or pressure?
   1. YES, ALMOST MORE THAN I COULD BEAR OR STAND
   2. YES, QUITE A BIT OF PRESSURE
   3. YES, SOME MORE THAN USUAL
   4. YES, SOME BUT ABOUT USUAL
   5. YES, A LITTLE
   6. NOT AT ALL (157)

6. During the past month, how happy, satisfied, or pleased have you been with your personal life?

1. EXTREMELY HAPPY, COULD NOT HAVE BEEN MORE SATISFIED OR PLEASED
2. VERY HAPPY
3. FAIRLY HAPPY
4. SATISFIED, PLEASED
5. SOMEWHAT DISSATISFIED
6. VERY DISSATISFIED (158)

7. During the past month, have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel, or of your memory?

1. NOT AT ALL
2. ONLY A LITTLE
3. SOME, BUT NOT ENOUCH TO BE CONCERNED WITH
4. SOME, AND I HAVE BEEN A LITTLE CONCERNED
5. SOME, AND I AM QUITE CONCERNED
6. YES, VERY MUCH SO AND I AM VERY CONCERNED (159)

8. During the past month, have you been anxious, worried or upset?

1. EXTREMELY SO, TO THE POINT OF BEING SICK OR ALMOST SICK
2. VERY MUCH SO
3. QUITE A BIT
4. SOME, ENOUGH TO BOTHER ME
5. A LITTLE BIT
6. NOT AT ALL (160)

9. During the past month, have you been waking up fresh and rested?

1. EVERY DAY
2. MOST EVERY DAY
3. FAIRLY OFTEN
4. LESS THAN HALF THE TIME
5. RARELY
6. NONE OF THE TIME (161)

10. During the past month, have you been bothered by any illness, bodily disorders, pains, or fears about your health?

1. ALL THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME (162)

11. During the past month, has your daily life been full of things that were interesting to you?

1. ALL THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME (163)

12. During the past month, have you felt downhearted and blue?

1. ALL OF THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME

(164)

13. During the past month, have you been feeling emotionally stable and sure of yourself?

1. ALL OF THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME

(165)

14. During the past month, have you felt tired, worn out, used-up, or exhausted?

1. ALL OF THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME

(166)

For each of the four scales below, note that the words at each end of the 0-to-10 scale describe opposite feelings. Circle the number along the line which is closest to how you have generally felt DURING THE PAST MONTH.

15. During the past month, how concerned or worried about your health have you been?

0 1 2 3 4 5 6 7 8 9 10

NOT AT ALL CONCERNED ——— VERY CONCERNED (167–168)

16. During the past month, how relaxed or tense have you been?

0 1 2 3 4 5 6 7 8 9 10

VERY RELAXED ——— VERY TENSE (169–170)

17. During the past month, how much energy, pep, vitality, have you felt?

0 1 2 3 4 5 6 7 8 9 10

NO ENERGY AT ALL, LISTLESS ——— VERY ENERGETIC DYNAMIC (171–172)

18. During the past month, how depressed or cheerful have you been?

0 1 2 3 4 5 6 7 8 9 10

VERY DEPRESSED ——— VERY CHEERFUL (173–174)

APPENDIX C
CHARACTERISTICS OF SCALES (E1-E4s)

CODE= QUESTIONNAIRE SECTION AND ITEM NUMBER FROM APPENDIX B:

U=UNIT COHESION AND MORALE SECTION
F=MODIFIED FIELD FORCES QUESTIONNAIRE SECTION
P=COMPANY PERCEPTIONS SECTION
S=SQUAD/PLATOON PERCEPTIONS SECTION
W=WELL-BEING AND INTERPERSONAL SUPPORT SECTION
**ALL ITEMS RECODED TO RUN IN A POSITIVE DIRECTION. FOR U,F,
**P & S, 1=LEAST POSITIVE RESPONSE, 5=MOST POSITIVE RESPONSE

DESC= VERBAITIM PHRASE FROM THE ITEM

ITTOT1= ITEM-TOTAL CORRELATION FROM DATA SET #3:
Two correlations are given, the first from the sample that matches the Data Set #4 sample, the second from the sample that does not match the Data Set #4 sample. Matching variable is Social Security Number.

ITTOT2= ITEM-TOTAL CORRELATION FROM DATA SET #4:
Two correlations are given, the first from the sample that matches the Data Set #3 sample, the second from the sample that does not match the Data Set #3 sample.

FLOAD1= FACTOR LOADING FROM A SIX-FACTOR SOLUTION
FACTOR ANALYSIS OF 78 U,F,P, & S ITEMS FROM DATA SET #3:
Varimax rotation method with the factor number given in parentheses. (N=4717)

FLOAD2= FACTOR LOADING FROM A SIX-FACTOR SOLUTION
FACTOR ANALYSIS OF 78 U,F,P, & S ITEMS FROM DATA SET #4:
Varimax rotation method with the factor number given in parentheses. (Same items as used for FLOAD1.) (N=3833)

CRITCORR= CORRELATION WITH THE CRITERION ITEM (LISTED FIRST)
(CORRELATION RANGE FROM FOUR SUBSAMPLES--SEE ITTOT1&2)

ALPHA= CRONBACH'S RELIABILITY COEFFICIENT ALPHA
N= NUMBER OF CASES
MEAN= MEAN SCALE SCORE (SCORES COMPUTED BY ADDING ITEM RESPONSE CODES AND LINEARLY TRANSFORMING THE SUM TO ITS VALUE ON A 0-100 SCALE WITH 50 AS THE MIDPOINT VALUE) (EXCEPT SCALE #8)
SD= STANDARD DEVIATION
25%= THE 25TH PERCENTILE
50%= THE MEDIAN
75%= THE 75TH PERCENTILE

UNIV1= UNIVARIATE DATA FROM DATA SET #3
UNIV2= UNIVARIATE DATA FROM DATA SET #4
UNIV3= UNIVARIATE DATA FROM DATA SET #5
UNIV4= UNIVARIATE DATA FROM DATA SET #6
(C)= UNIVARIATE DATA BASED ON COMPANY/BATTERY MEANS

SCALE NUMBER: 1
SCALE NAME: Military Self-Esteem
DEFINITION: Pride and Confidence in One's Own Military Skills, Abilities, and Worth
HYPOTHESIZED FACTOR: Positive Military Identity and Role in the Unit

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
U16	your personal morale	.52/.50	.54/.51	.44(6)	.46(3)	-------
U7	confidence in yourself	.49/.50	.54/.50	.62(6)	.57(3)	.30-.34
U14	rate your own skills	.44/.45	.46/.41	.58(6)	.55(3)	.26-.29
F1	proud to be in the Army	.50/.52	.56/.51	.54(6)	.56(3)	.34-.40
F4	I am an important part	.53/.53	.57/.53	.51(6)	.52(3)	.37-.43
F10	what I do..is worthwhile	.53/.52	.60/.54	.50(6)	.58(3)	.38-.45
P21	confidence in myself	.49/.47	.54/.53	.60(6)	.60(3)	.27-.31
ALPHA		.77/.77	.81/.78			
MEAN INTER-ITEM CORRELATION		.33/.33	.38/.34			
N		2761/3257	2464/2320			

	MEAN	SD	25%	50%	75%	N
UNIV1	63.2	17.0	53.6	64.3	75.0	6370
UNIV2	61.6	17.8	50.0	64.3	75.0	5430
UNIV3	59.7	17.5	50.0	60.7	71.4	5659
UNIV4	58.1	17.8	46.4	60.7	71.4	4849
UNIV1(C)	63.2	4.6	59.8	63.5	66.4	104
UNIV2(C)	61.9	5.3	58.2	62.4	65.3	107
UNIV3(C)	59.8	4.3	57.3	59.7	62.6	112
UNIV4(C)	58.0	4.4	55.8	58.8	60.8	90

SCALE NUMBER: 2
SCALE NAME: General Social Bonding
DEFINITION: Estimates of Closeness, Trust, and Cooperation Among Soldiers in the Unit as a Whole
HYPOTHESIZED FACTOR: Horizontal Cohesion (Soldier-Soldier)

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
U1	morale in your company	.53/.49	.57/.55	.52(1)	.56(1)	-------
U15	your unit's togetherness	.66/.68	.66/.66	.50(1)	.58(1)	.44-.51
F5	teamwork and cooperation	.65/.65	.70/.68	.53(1)	.60(1)	.43-.50
P2	very close to each other	.70/.69	.72/.74	.55(1)	.65(1)	.40-.47
P24	most.. can be trusted	.52/.54	.52/.56	.39(1)	.42(1)	.27-.34
P31	look out for each other	.64/.65	.70/.67	.46(1)	.52(1)	.36-.43
ALPHA		.84/.84	.86/.86			
MEAN INTER-ITEM CORRELATION		.47/.46	.50/.49			
N		2773/3280	2524/2385			

	MEAN	SD	25%	50%	75%	N
UNIV1	47.4	19.8	33.3	50.0	62.5	6153
UNIV2	45.0	20.9	29.2	45.8	58.3	5182
UNIV3	43.6	21.2	29.2	45.8	58.3	5463
UNIV4	43.0	20.4	29.2	45.8	58.3	4608
UNIV1(C)	47.8	9.3	40.6	47.9	53.3	104
UNIV2(C)	45.7	8.9	40.0	46.0	51.0	107
UNIV3(C)	44.3	8.3	39.1	43.6	49.0	112
UNIV4(C)	43.2	7.0	38.5	43.0	47.3	90

SCALE NUMBER: 3
SCALE NAME: Off-Duty Associations
DEFINITION: Within-Unit Reports of Friendships, After-Duty Contact, or Peer Support for Personal Problems
HYPOTHESIZED FACTOR: Horizontal Cohesion (Soldier-Soldier)

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
P10	my closest friendships	.49/.50	.55/.53	.56(3)	.56(4)	-------
P9	my after-duty hours	.53/.51	.56/.53	.58(3)	.58(4)	.52-.57
S4	my platoon after-duty	.60/.59	.59/.60	.65(3)	.64(4)	.44-.49
S7	go to..my squad for help	.62/.62	.64/.64	.68(3)	.69(4)	.31-.35
S8	my platoon for help	.66/.66	.66/.63	.70(3)	.69(4)	.30-.34
S9	squad..lend me money	.63/.62	.65/.66	.68(3)	.70(4)	.29-.35
S10	platoon..lend me money	[redacted]	.64/.60	.68(3)	.68(4)	.26-.32
ALPHA		.84	.85/.84			
MEAN INTER-ITEM CORRELATION		.43/.43	.45/.44			
N		2700/3208	2530/2392			

	MEAN	SD	25%	50%	75%	N
UNIV1	54.1	20.6	39.3	57.1	67.9	6002
UNIV2	54.1	20.9	39.3	57.1	67.9	5184
UNIV3	53.0	21.2	39.3	53.6	67.9	5423
UNIV4	50.9	21.1	39.3	50.0	67.9	4605
UNIV1(C)	54.2	5.5	51.1	54.6	57.4	104
UNIV2(C)	54.1	6.7	50.1	53.8	57.4	107
UNIV3(C)	52.7	5.5	49.8	52.7	55.8	112
UNIV4(C)	50.3	5.6	46.9	49.9	53.4	90

SCALE NUMBER: 4
SCALE NAME: Caring Leadership
DEFINITION: Estimates of Whether Leaders (NCOs and Officers) Show an Interest In or Concern for Soldiers as Individuals
HYPOTHESIZED FACTOR: Expressive Vertical Cohesion (Soldier-Leader)

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
P26	treat me as a person	.58/.60	.62/.58	.55(2)	.54(2)	-------
P17	go to..chain-of-command	.49/.47	.56/.48	.47(2)	.47(2)	.42-.49
S11	platoon sergeant talks	.54/.53	.55/.54	.47(2)	.43(2)	.33-.38
S12	platoon leader talks	.59/.57	.62/.57	.57(2)	.59(2)	.31-.37
S13	company commander talks	.55/.53	.53/.53	.61(2)	.62(2)	.29-.32
S14	officers..my..welfare	.68/.68	.72/.69	.68(2)	.73(2)	.41-.47
S15	NCOs..my..welfare	.67/.70	.71/.69	.48(2)	.48(2)	.49-.54
S16	officers..how I feel	.70/.70	.74/.69	.69(2)	.73(2)	.45-.50
S17	NCOs..how I feel	.70/.69	.73/.69	.49(2)	.49(2)	.53-.58
ALPHA		.87/.87	.89/.87			
MEAN INTER-ITEM CORRELATION		.43/.43	.47/.43			
N		2727/3219	2506/2380			

	MEAN	SD	25%	50%	75%	N
UNIV1	42.7	20.5	27.8	44.4	58.3	6035
UNIV2	41.3	21.0	25.0	41.7	55.6	5150
UNIV3	40.8	21.2	25.0	41.7	55.6	5361
UNIV4	39.3	21.0	25.0	41.7	52.8	4547
UNIV1(C)	43.1	7.8	37.4	43.0	48.7	104
UNIV2(C)	41.9	6.8	37.1	41.0	45.8	107
UNIV3(C)	41.4	6.4	37.1	41.0	45.4	112
UNIV4(C)	39.6	6.3	36.0	39.4	43.9	90

SCALE NUMBER: 5
SCALE NAME: Confidence in Officers
DEFINITION: Perceptions of Company-Level Officers' Military Competency, Proficiency, Technical Knowledge, or Combat Leadership Skills
HYPOTHESIZED FACTOR: Instrumental Vertical Cohesion (Soldier-Leader)

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
P33	officers would lead well	.73/.73	.75/.74	.51(1)	.45(1)	-------
U4	confidence..platoon ldr	.57/.57	.57/.48	.35(4)	.39(5)	.37-.44
U5	confidence..company cdr	.58/.59	.55/.56	.42(1)	.40(1)	.48-.54
F24	my leaders are better	.50/.51	.59/.56	.43(1)	.57(1)	.36-.47
P3	know their stuff	.69/.70	.72/.74	.49(1)	.48(1)	.68-.72
P12	quality of leadership	.68/.68	.70/.68	.52(1)	.55(1)	.54-.57
S20	plt ldr knows his stuff	.57/.59	.57/.56	.42(4)	.45(2)	.45-.49
S24	serve under in combat	.75/.72	.77/.74	.46(1)	.41(1)	.69-.73
S28	chain-of-command works	.54/.57	.60/.61	.52(2)	.52(2)	.43-.47
ALPHA		.88/.88	.89/.88			
MEAN INTER-ITEM CORRELATION		.45/.45	.47/.46			
N		2661/3105	2246/2180			

	MEAN	SD	25%	50%	75%	N
UNIV1	50.7	19.8	38.9	52.8	63.9	5853
UNIV2	46.8	19.9	33.3	47.2	61.1	4656
UNIV3	44.4	19.9	30.6	47.2	58.3	4825
UNIV4	43.8	19.2	30.6	44.4	55.6	4156
UNIV1(C)	50.7	9.9	42.7	52.4	56.4	104
UNIV2(C)	46.6	7.6	41.5	45.9	52.0	107
UNIV3(C)	44.4	7.5	38.6	43.7	49.4	112
UNIV4(C)	44.0	6.9	39.0	44.1	49.0	90

SCALE NUMBER: 6
SCALE NAME: Confidence in NCOs
DEFINITION: Perceptions of NCOs' Military Competency,
Proficiency, Technical Knowledge, or Combat Leadership Skills
HYPOTHESIZED FACTOR: Instrumental Vertical Cohesion (Soldier-Leader)

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
P34	NCOs..would lead well	.74/.71	.74/.72	.68(4)	.59(5)	-------
P6	NCOs..know their stuff	.69/.66	.71/.68	.62(4)	.56(5)	.65-.73
S18	sqd ldr knows his stuff	.54/.55	.51/.50	.63(4)	.60(5)	.41-.44
S19	plt sgt knows his stuff	.50/.54	.49/.50	.60(4)	.58(5)	.40-.44
S25	serve under in combat	.72/.70	.72/.71	.66(4)	.61(5)	.68-.72
ALPHA		.84/.83	.83/.83			
MEAN INTEF-ITEM CORRELATION		.50/.50	.50/.49			
N		2702/3197	2525/2396			

	MEAN	SD	25%	50%	75%	N
UNIV1	57.2	21.1	45.0	60.0	75.0	5991
UNIV2	55.0	21.7	40.0	55.0	70.0	5180
UNIV3	52.5	21.1	40.0	55.0	70.0	5381
UNIV4	50.2	21.4	40.0	50.0	65.0	4557
UNIV1(C)	57.8	8.3	51.3	57.8	63.9	104
UNIV2(C)	55.4	7.3	50.3	54.7	60.1	107
UNIV3(C)	53.2	6.8	48.6	53.6	57.9	112
UNIV4(C)	50.5	6.5	46.5	50.6	55.1	90

SCALE NUMBER: 7
SCALE NAME: Confidence in Weapons and Training
DEFINITION: Assessments of Company Training, Weapons Quality, and Confidence in Fellow Soldiers' Readiness for Combat or Success in Combat
HYPOTHESIZED FACTOR: Combat Readiness

CODE	DESC	ITTOT1	ITTOT2	FLOAD1	FLOAD2	CRITCORR
U2	readiness for combat	.62/.62	.65/.61	.56(1)	.50(1)	-------
U3	readiness to fight	.54/.50	.53/.52	.47(1)	.43(1)	.55-.63
U13	unit's major weapons	.57/.58	.58/.55	.37(6)	.47(3)	.38-.45
U17	condition of..weapons	.51/.53	.53/.54	.35(1)	.43(3)	.34-.38
F14	equipment..is better	.39/.36	.45/.41	.34(6)	.48(3)	.20-.26
F15	winning future conflicts	.58/.59	.63/.60	.50(1)	.49(1)	.40-.47
P4	a better job in combat	.66/.64	.67/.64	.68(1)	.70(1)	.46-.51
P18	confidence in..weapons	.56/.57	.61/.59	.40(6)	.52(3)	.31-.35
P19	ability to use..weapons	.63/.64	.69/.68	.54(1)	.52(1)	.43-.46
P20	level of training..high	.58/.57	.57/.61	.56(1)	.53(1)	.40-.46
P32	better trained	.62/.61	.64/.64	.64(1)	.66(1)	.43-.49
ALPHA		.87/.87	.88/.88			
MEAN INTER-ITEM CORRELATION		.38/.37	.41/.39			
N		2648/3126	2477/2361			

	MEAN	SD	25%	50%	75%	N
UNIV1	53.6	17.0	43.2	54.5	65.9	5864
UNIV2	52.7	17.1	43.2	54.5	63.6	5105
UNIV3	51.9	17.3	40.9	52.3	63.6	5331
UNIV4	50.0	17.1	40.9	50.0	61.4	4530
UNIV1(C)	54.0	7.1	48.8	54.3	58.2	104
UNIV2(C)	53.2	6.7	49.8	53.8	57.5	107
UNIV3(C)	52.1	7.1	48.0	52.8	56.6	112
UNIV4(C)	49.8	6.3	45.1	49.7	53.6	90

SCALE NUMBER: 8
SCALE NAME: Psychological General Well-Being*
DEFINITION: A Psychological State Indicating Lack of Distress, Depression, and Anxiety or the Presence of Health, Energy, and Emotional Stability

CODE	DESC	ITTOT1	ITTOT2
W1	feeling in general	.66/.67	.70/.68
W2	bothered by..nerves	.63/.63	.68/.65
W3	control of your behavior	.60/.61	.66/.63
W4	felt so sad..hopeless	.69/.67	.70/.68
W5	under any strain, stress	.63/.63	.66/.64
W6	how happy, satisfied	.49/.48	.53/.53
W7	losing your mind/control	.64/.63	.67/.64
W8	anxious, worried..upset	.67/.66	.72/.70
W9	waking up fresh..rested	.54/.51	.59/.54
W10	illness..pains..health	.47/.46	.48/.48
W11	life..full of..interest	.43/.39	.46/.45
W12	felt downhearted..blue	.70/.71	.74/.73
W13	feeling..stable and sure	.61/.60	.66/.65
W14	felt tired, worn out	.59/.58	.64/.61
W15	worried about..health	.37/.34	.39/.30
W16	how relaxed or tense	.71/.70	.76/.72
W17	how much energy, pep	.58/.56	.64/.60
W18	depressed or cheerful	.72/.70	.75/.72
ALPHA		.91/.90	.92/.91
MEAN INTER-ITEM CORRELATION		.39/.38	.44/.41
N		2689/3179	2737/2617

	MEAN	SD	25%	50%	75%	N
UNIV1	58.3	19.8	45.0	59.0	72.0	6318
UNIV2	61.3	20.3	48.0	62.0	76.0	5715
UNIV3	59.8	20.4	46.0	60.0	74.1	6021
UNIV4	61.0	20.1	47.6	61.0	75.0	4960
UNIV1(C)	58.6	5.4	54.6	58.3	62.1	104
UNIV2(C)	61.5	5.6	57.7	62.1	65.1	107
UNIV3(C)	60.0	5.4	56.2	60.0	63.9	112
UNIV4(C)	61.0	4.3	58.5	61.1	63.2	90

*This scale was developed by Dupuy (1984) and incorporates the following scoring procedure. All items are first recoded to run in a positive direction, i.e. response codes from lower to higher well-being. Six-point items (W1-W14) are then recoded to run from 0 to 5, and eleven-point items (W15-W18) are left to run from 0 to 10. All eighteen item scores are then added to produce a total scale score that runs from 0 to 110. Up to two missing values are tolerated, in which case the added score of the remaining items is multiplied by 18/17 (one missing value) or 18/16 (two missing values). For cases where this weighting procedure is used (approximately 4%), the possible range of scores is 0 to 112.5.

INTERCORRELATIONS OF SCALES #1-7
(Individual Level)

	SCALE 1 SELFEST	SCALE 2 SOCBOND	SCALE 3 FRIENDS	SCALE 4 CARLEAD	SCALE 5 OFFCON	SCALE 6 NCOCON
SCALE 2 SOCBOND	.48-.53					
SCALE 3 FRIENDS	.32-.36	.48-.52				
SCALE 4 CARLEAD	.46-.52	.53-.59	.42-.46			
SCALE 5 OFFCON	.47-.57	.58-.64	.34-.37	.68-.72		
SCALE 6 NCOCON	.45-.52	.54-.56	.39-.42	.60-.63	.61-.66	
SCALE 7 COMBAT	.57-.66	.63-.64	.30-.36	.49-.55	.65-.70	.54-.61

KEY
Correlation range is across the four subsamples used in the reliability analyses. See the descriptions of ITTOT1 and ITTOT2 at the beginning of this appendix.

N Range= 2061-3270

SELFEST= Military Self-Esteem
SOCBOND= General Social Bonding
FRIENDS= Off-Duty Associations
CARLEAD= Caring Leadership
OFFCON = Confidence in Officers
NCOCON = Confidence in NCOs
COMBAT = Confidence in Weapons and Training

APPENDIX D
ESTIMATED RESPONSE RATES BY DATA SET NUMBER

DATA SET #	COHORT	IRS	TOTAL
3	78.1%	73.6%	76.6%
4	73.3%	66.1%	71.2%
5	75.3%	74.1%	74.9%
6	73.9%	69.4%	72.3%

Total response rates were computed by taking the total number of personnel surveyed over the total number of personnel assigned in those companies, batteries, and battalions included in the data set for which the latter number was available. Total numbers of assigned personnel were available for over 90% of the units included in each of the data sets above.

ABBREVIATIONS

BN	Battalion
CMF	Career Management Field (CMF11=Infantry, CMF13=Field Artillery, CMF19=Armor)
CO	Company Commander
COHORT	Acronym for Cohesion, Operational Readiness, and Training
CONUS	Continental United States
E1-E4	Ranks of Private through Corporal or Specialist
E5-E8	Ranks of Sergeant through First or Master Sergeant
ETS	Expected Date for Termination of Military Service
FA	Field Artillery
IET	Initial Entry Training (Training that a first-term soldier completes at an entry level training base which produces his first Military Occupational Specialty. Training may be provided within separate units labeled Basic Training and Advanced Individual Training or integrated within One Station Unit Training under a single cadre.)
IRS	Individual Replacement System
MFO	Multinational Force and Observers (United Nations Peacekeeping Operation in the Sinai)
NCO	Noncommissioned Officer
OCONUS	Outside the Continental United States
OSUT	One Station Unit Training
UMS	Unit Manning System (Organizational Descendant of the New Manning System)
USAREUR	United States Army Europe

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