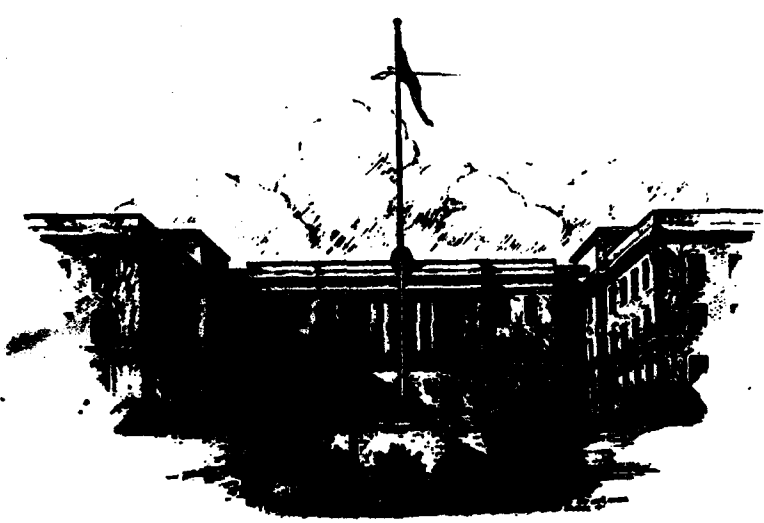


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An Investigation into the Value of Unit Cohesion in Peacetime



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Report WRAIR NP-83-5

**AN INVESTIGATION INTO THE VALUE OF
UNIT COHESION IN PEACETIME**

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INTRODUCTION

The importance of welding soldiers into small groups of comrades has been recognized by military leaders for centuries. Richardson (1978) takes us back to the first century BC to Asclepiodotus' book Tactics, which tells us that in the Greek phalanx a front rank man, protostates, together with his rear rank man epistates, were together called parastatai, comrades in arms. Richardson goes on to cite Onasander, in the first century AD, as the first real general to mention the importance of comradeship. He recommended that commanders should station "brothers in rank beside brothers; friends beside friends; and lovers beside their favorites." A strikingly similar passage occurs in the British Regulations for the Rifle Corps prepared in 1800:

Having found his company... he (the captain) will then arrange comrades. Every corporal, private and bugler will select a comrade of the rank different from his own, i.e., front and rear rank, and is never to change him without the permission of his Captain. Comrades are always to have the same berth in quarters; and that they may be as little separated as possible, in either barracks or the field, will join the same file on parade and go on the same duties with arms when it is with the baggage also.

The French officer and military theorist Ardant DuPicq (1958) extended this advice in attempting to persuade his Chief-of-Staff more than a hundred years ago of the importance of unit cohesion. "Four brave men", he said, "who do not know each other will not dare to attack a lion. Four less brave, but knowing each other well, sure of their reliability and consequently of mutual aid, will attack resolutely."

Many first hand reports on battle stress casualties made it clear that by the end of World War II, American psychiatrists also recognized the overwhelming importance of interpersonal relationships in sustaining soldiers in battle. Historian S.L.A. Marshall (1966) said it best however, in writing of his observations in World War II:

I hold it to be one of the simplest truths of war

that the thing which enables an infantry soldier to keep going with his weapons is the near presence or presumed presence of a comrade.

Later on, he answers his own question of what induces a man to face death bravely:

...largely the same things which induce him to face life bravely --- friendship, loyalty to responsibility, and the knowledge that he is a repository of the faith and confidence of others.

The importance of unit cohesion in time of peace, it seems to us, is much less well accepted. Indeed, one could argue, with Marshall, that:

It is from the acquiring of the habit of working with the group and of feeling responsible to the group that his (the soldier's) thoughts are apt to turn ultimately to the welfare of the group when tactical disintegration occurs in battle.

One could argue as DuPicq, that while esprit-de-corps may improve with experience in war, wars are becoming shorter and shorter, demanding therefore that we create esprit in advance. However, it has been our experience that these arguments are often ineffective with commanders. Their posture may be summarized by the answer we received on one occasion: "The enemy will take care of our cohesion building. Right now, my job is training, not making the troops feel good." The project we will describe below was our attempt to find an answer to the basic question implicit in that response: How does the presence or absence of unit cohesion affect the peacetime performance of basic individual and unit skills?

Our investigation is of course not the first in this area. There exists an extensive literature devoted to the relationship between interpersonal attraction and productivity. Results, however, in studies of the peacetime military, athletic teams, and industries have all proved equivocal. Goodacre (1951) found a high positive correlation between sociometric measures of cohesiveness and the problem-solving scores of combat units engaged in field

exercises. Hemphill and Sechrest (1952) studied bomber crews in combat over Korea. Sociometric scores of crew cohesiveness were positively correlated with bombing accuracy scores. French (1951) on the other hand, was unable to show a significant relationship between his sociometric index of cohesiveness within military recruit companies and a variety of measures of performance, and Palmer and Myers (1968), observing radar crews of forty anti-aircraft batteries for a period of three months, found sociometric measures of group cohesiveness negatively related to productivity.

Results are no less diverse in the area of team athletic competition. Klein and Christiansen (1969), VanderVelden (1971), and Wydmeyer and Martens (1978), for example, all found highly cohesive basketball teams were more successful than less cohesive teams. Fiedler (1954) and Grace (1954), however, found a negative relationship between cohesion and performance, and Melnick and Chemers (1974) found that cohesiveness had neither a positive nor negative relationship to team success in basketball.

Stogdill's (1972) review of the experimental and civilian work force literature produced the same diversity of results: twelve studies showed a positive relationship between productivity and cohesiveness, eleven showed a negative relationship, and eleven showed no relationship whatever. In the analysis of these results, Stogdill (1972), points out that cohesiveness and productivity tend to be positively related under conditions of high group motivation and negatively related under conditions of low motivation. An even more elementary explanation, however, is the wide variation in the measurement, indeed even the definition, of cohesiveness. Cartwright (1968) has pointed out three rather different uses of the term: (a) attraction to the group, including resistance to leaving it; (b) the motivation of members to participate in group activities; and (c) coordination of the efforts of members. Although he felt that sociologists and social psychologists had more or less come to a de facto agreement limiting their use to the first of these three (cf. Lott and Lott, 1965), Zander's (1979) view was that "...in the absence of a reliable method for measuring cohesiveness in a natural setting, or a reliable procedure for creating it in the laboratory, one cannot be sure to what phenomena investigators are attending when they examine its origins or effects."

Military writers, at any rate, tend to use a working definition which includes group motivation or direction as well as group attractiveness. The Chief-of-Staff of the US Army thus defined unit cohesion as follows: "The bonding together of soldiers in such a way as to sustain their will and commitment to each other, the unit, and mission accomplishment despite combat or mission stress (ARCOST Action Team, 1980; see also Hauser, 1979). This definition, which incorporates the added concept of group drive, implies that the group member's identification with leaders of his unit and his group often results in commitment to the norms of the formal organization which these leaders represent. It also emphasizes the critical role of the small unit leader, who is in fact a member of at least two groups simultaneously. The "link-pin" concept of Likert (1961) is helpful in this regard. For Likert, leaders occupy positions in a hierarchy between levels; they are simultaneously members of their small face-to-face work groups and members of the next higher managerial echelon. It is thus possible for cohesion to be transmitted and distributed throughout a sizeable collection of groups that are not coextensive in their memberships but are linked to one another by members who occupy positions in more than one group. We generally speak of this larger collective as having esprit-de-corps or esprit when this process is successful. In any case, we began our inquiry into the value of cohesion in peace time with a clear realization that it would need a measure of cohesion that included not only attraction to peers, but also identification with leaders and/or organizational goals. Our survey of the literature, and that of Stogdill (1972), made us confident that if we could devise such a measure the importance of unit cohesion to peacetime military performance would become apparent to commanders.

MEASUREMENT OF COHESION

Conversations, interviews, and test runs with soldiers and experienced leaders, as well as close inspection of the literature cited above, led to a battery of questions which were put to a sample of each of the 20 battalions visited by the 7th U.S. Corps Inspector General (IG) in the course of a 9 month period in late 1979 to early 1980. A total of 37 people in each battalion were questioned by IG team members: the battalion personnel officer, the Company

Commanders of Headquarters (HHC) and Alpha Companies; the First Sergeants of Charlie and Service Companies; platoon leaders from 1st platoon Bravo Company, 2nd platoon Charlie Company, and the scout platoon from Service Company; platoon sergeants were quizzed from the communications platoon of HHC, 3rd platoon, Alpha Company, and 4th platoon, Bravo Company; Alpha, Bravo and Charlie Companies each contributed two squad leaders, and HHC and Service Company one each. Fifteen junior enlisted soldiers were selected at random from the unit manning roster, as well as 3 soldiers below the rank of E-4 who had arrived only within the prior month. The sets of questions were of course tailored to fit the position of the person within the unit, and tapped both subjective feeling ("How do you like being in this unit?") and objective information ("Who do you spend time with after duty hours?"). The junior enlisted men were questioned about their squad, squad leaders about their squads and their platoons. The Platoon Sergeant was questioned about his platoon and the company, and so on up the line so that although we ultimately derive a battalion score, this is merely a compilation of the attachment the surveyed members feel to their immediate group (including the leaders). The leftmost column of Table 1A is a list of the questions asked the junior enlisted soldiers. The central three columns (headed by plus, 0, and minus) are sample high-cohesion, low-cohesion, and zero-cohesion answers. The inspection team member asking the questions compared the answers received with the sample answers and simply circled the sample answer most similar to that given by the subject. We then awarded one point for each plus answer and subtracted a point for each minus answer. The individual's score was simply the algebraic sum, and the battalion score the sum total accumulated across all ranks, positions, and questions. The three columns on the far right of Table 1A are in fact the percentage of subjects giving high, low and zero cohesion answers to these questions. These data are based on the answers of 300 junior enlisted soldiers in 20 battalions. Table 1B is a similar display of the questions put to company commanders.

A question that arises immediately in the development of any new measuring instrument, of course, is that of reliability. In the present case, a skeptic might ask if we were actually learning something about the battalions involved or about the IG team members asking the questions. In fact, that doubt has been almost entirely resolved by the 35 interviews that were scored independently and simultaneously by a team member and one of the

authors. The correlation between the two sets of scores so derived is .98, so whatever the questions may be measuring, they almost certainly involve differences among battalions rather than differences among our questioners.

The question of validity, however, is somewhat more difficult to answer. In the words of more than a few of the battalion commanders whose units scored on the low side, "Are we really measuring unit cohesion?" The question itself, of course, assumes that there is some standard out there against which we can hold our new measuring instrument to assess its adequacy. Much like the standard yard, foot and inch measures the Greenwich Observatory. In fact, if such a standard exists at all, it is in the minds of people like the cavalry old Infantry colonel who was the Inspector General for the Corps. Our only goal was to make a handy instrument. One doesn't need 30 years' experience to tell whether a unit has a reasonable level of cohesion. Viewed in this way, the measurement appears to have a fairly high degree of validity. There were only two instances out of 20 battalions where the Inspector General saw unit cohesion as markedly different than our scores indicated. In one case, he felt the scores were too high, and in another case he felt they were too low. Further evidence for "face" validity came from the scores of the two armored cavalry squadrons we assessed. These two units, the closest we have to elite troops in US Army, Europe, gathered 82 and 79 percent of all possible points on our cohesion measure. The rest of the units tested scored between 65 and 74 percent.

Another approach to the topic of validity forsakes the search for an outside standard altogether, and simply asks whether the measure helps organize our experience at all. Does it show any orderly relationships to other available data? If so, are they the relationships one would expect if the measure really measured cohesion? The data in Tables Two through Six provide an affirmative answer to both of these questions.

A varimax factor analysis conducted on the average scores of the 8 subgroups (personnel officer, C.O., First Sergeant, etc.) of each battalion, using the Statistical Package for the Social Sciences, yielded a primary factor most strongly represented by the scores of junior enlisted soldiers, followed closely by those of the commanding officer and first sergeant. Two further factors, strongly dominated by the scores of the personnel officers (S-1) and

"newbies" respectively, accounted for the remainder of the variance. Therefore, for the sake of clarity and simplicity, the data in Tables 2 through 6 are limited to the scores of the junior enlisted. Each of these tables involves dividing the total enlisted sample into sub-samples based on type of battalion, type of job, months on the job, rank, or race, and then noting what percentage of the scores in each of these subgroups fell into the low third, the middle third and the high third of all junior enlisted scores. Simply put, the important number in each of these tables is 33: if there are no differences among the sub-samples, then all of the entries in the table should read 33. In Table 2, however, we see that only 23% of junior enlisted soldiers in the armor battalions we investigated had scores which placed them among the low one-third of all junior enlisted. Thirty-two percent scored in the middle third, and 45% scored in the high one-third. Further inspection of the column labelled "HIGH THIRD" reveals that Armor and Cavalry, both units organized around small groups of soldiers in a fighting vehicle, show disproportionately high cohesion scores. If we look at Table 3, which shows as its sub-sample career management fields (type of job), we see that 46% of Armor crewmen score among the high one-third of enlisted soldiers. Tables 4 through 6 also show reasonable results for a purported measure of cohesion. Scores increase with rank, and with time on the job, and, as we might expect, minorities tend to identify less with their battalion than Caucasians. We could perhaps continue this analysis somewhat further, but it is clear that the findings are at least consistent with the hypothesis that we're measuring "the bonding together of soldiers in such a way as to sustain their will and commitment to each other and the unit". We will now turn to the subject of whether our measures have anything to do with mission accomplishment.

RELATIONS BETWEEN SURVEY SCORES AND TRADITIONAL MEASURES OF BATTALION PERFORMANCE

Table 7 shows the intercorrelations among nine measures of battalion performance. A glossary of acronyms is included at the rear of the paper, so we will not go into great detail at the moment on this table. We started out with a much larger list --- 23, in fact --- which constituted just about all the quantifiable information we could

obtain on the units. Many of them, however, were closely related to one of these nine or, in a couple of instances, showed the same score for nearly all battalions. These nine are not very closely related, and our combat arms brethren assure us that taken as a set, they provide a pretty fair picture of battalion functioning. Figure 1 contrasts the performance of the 5 battalions with the highest cohesion scores with the 5 lowest scoring, and Table 8 shows the correlation of cohesion scores with the various measures of performance across all 20 battalions. The bottom line of the table shows the rank-order correlations between the battalion cohesion scores (i.e., summing over all 37 interviews in each of the 20 battalions) and each of the nine performance measures. The lines above this one show the statistically significant correlations between these measures and various subsamples of the battalion. Ignoring the far right hand column for the moment, the table shows very strong relations between cohesion scores and the results of the annual general inspection (AGI), with physical fitness testing (PT), operational readiness testing (ORT), and with the number of battalion members arrested in the previous 12 months (CRIME). Considerably less impressive relations existed between unit cohesion scores and the percentage of battalion members passing the IG-administered skill qualification tests (SQT), the battalion's reenlistment (REUP6), disciplinary (UCMJ6), and administrative discharge (AD6) rates. No relationship whatever was seen in the case of yearly battalion level tactical testing (ARTEP). We were initially quite disappointed that all our cohesion measures did not correlate strongly with all our performance measures, and spent considerable time and effort evaluating hypotheses explaining this particular spectrum of findings. Platoon leaders, platoon sergeants, and section or squad leaders show very low correlations with battalion performance. Why this should be so is not clear. The simplest explanation is that the questions asked of these groups were simply not good ways of measuring the extent to which these men felt themselves a part of a cohesive unit. It is of course possible that the questions are fine measures, but that some unique characteristics of these groups or their positions (e.g., first level supervisors, former junior enlisted, etc) make their cohesion scores unrelated to unit performance. We cannot presently determine which of these alternatives is correct, and would thus opt for the simpler.

On the performance side, we finally recalled conversation with commanders in which they talked about juggling

priorities, even selective disobedience, in the face of too little time for too many tasks. Indeed, if everyone picked his priorities slightly differently, we would be doomed to exactly the kind of results we see in the table. Under these circumstances perhaps the most useful description of our results would be that performance is a function of both knowledge (itself a function of such things as training time, instructor ability and diligence and training aids as well as native ability) and motivation (a very direct function of unit cohesion and esprit as well as traditional creature comforts): $\text{Performance} = f(\text{knowledge} \times \text{motivation})$. Factors like the battalion's priorities, the level of technical skill required for a given task, and available resources will determine which specific aspects of a given battalion's performance are affected most strongly by level of unit cohesion.

The right hand column of Table 8 might be seen as a test of this notion of cohesion as a non-specific "multiplier". It shows the correlation of cohesion scores and the average ranking of the battalion on the nine performance measures in the table. As expected, the correlation of battalion cohesion with this measure of overall performance is quite high (.81). Scores of the junior enlisted soldiers (.72) and the company commanders (.68) also showed exceptionally high correlations. It seems likely then that unit cohesion, "bonding together of unit members... to sustain their will and commitment to each other, the unit, and mission accomplishment," is indeed not only a "force multiplier" in combat, but a powerful "training multiplier" in time of peace.

Some might argue (and have) that this discovery by no means implies that esprit or cohesion causes high performance, but that in fact it is more likely to be other way around --- that high performance produces high esprit. There is certainly nothing in our data that would allow us to choose between these two positions (if indeed we must choose rather than accept the seemingly obvious middle ground of a reciprocal interaction). Our Army is just initiating a substantial number of changes aimed at drastically increasing unit cohesion, including introduction of a regimental system of some sort and unit rotations to overseas assignments. Perhaps we will soon know the answer to the question of primacy. In the meantime, however, we can ask where the high scoring units in the present study step away from the pack. Even more precisely, which questions on our survey differentiated the five most cohesive units from the five least cohesive

units? Nine of the junior enlisted questions so qualified, but the best of these were:

(1) How often, aside from meetings, does the CO talk with you personally?

(2) Is your squad (section) leader ever included in after-duty activities?

(3) If we went to war tomorrow, would you feel confident going with this unit, or would you rather go with another?

(4) How often, aside from meetings, does your platoon leader talk with you personally?

(5) Who would you go to first if you had a personal problem, like being in debt?

Question number three, on confidence in going to war, was intended as a broad sort of summary question, and it does not provide much guidance for creating cohesion, however well it may measure it. The other four questions, however, seem to us to have profound implications for leadership.

"Solidarity and confidence cannot be improvised. They are born only of mutual acquaintanceship ... pride exists only among people who know each other well". This advice of DuPicq (1946) is apparently nowhere more applicable than in the relations of leader to led. Not only does the group member's commitment to the norms of the formal organization depend upon identification with the leaders, in the "link-pin" fashion described above (George, 1971), but persons who are made to feel like valued members of a group will feel far more attraction to the group than those who do not have much social worth. We would argue from this that building cohesion requires interaction beyond the work setting, where rank and duties so clearly delimit "worth." Unit athletic teams provide excellent examples of settings where a private might outperform superiors, might even teach them a thing or two, and in the process, come to be known by them as other than first rank, fourth file in the heavy weapons platoon.

Which activities are not so important as who partici-

pates in how many different settings. Company leaders usually acknowledge the necessity of "command presence" in the barracks after duty hours, but all too often find they have nothing to say once they get there. They find their only shared experiences are the formal interactions of the workday. Hence, their presence after work is often resented. The more people, the more varied the settings, and the more time the group maintains stable membership, the more the members have in common and the higher the resultant cohesion. S.L.A. Marshall (1966) provides a succinct and appropriate closing which is consistent with this view:

The good company has no place for an officer who would rather be right than be loved, for the time will quickly come when he walks alone, and in battle no man may succeed in solitude.

TABLE 1A: QUESTIONS ASKED OF 15 RANDOMLY SELECTED JUNIOR ENLISTED SOLDIERS IN EACH OF 20 BATTALIONS; "MODEL" HIGH-COHESION (+) NEUTRAL (0), AND LOW-COHESION (-) ANSWERS WHICH SERVED AS STANDARDS FOR THE SCORERS; AND THE PERCENTAGE OF ACTUAL ANSWERS FALLING IN EACH OF THESE THREE CATEGORIES.

	QUESTIONS	MODEL ANSWERS			PERCENT		
		(+)	(0)	(-)	(+)	(0)	(-)
1.	How do you like being in this unit?	Like it	It's alright	Hate it	26	61	13
2.	How do you like the guys in your squad?	Tight	They're OK	Hate them	31	67	3
3.	Who do you spend time with after duty hours, besides wife or girlfriend?	Same squad	Same Company but not same squad	Other	32	39	29
4.	Is there much mixing of races after duty, or do the blacks tend to hang with blacks, whites with whites, and so on?	Mixing	It all depends	Blacks with blacks, etc.	41	19	40
5.	Is your squad leader ever included in after duty activities?	Yes	Once in a while	No	29	20	52
6.	Do you like the work you're doing?	Yes, it's what I came in for	No, but or Yes, but	No (Make Work)	69	21	10
7.	Who would you go to first if you had a personal problem, like being in debt?	Someone in the same Platoon	Someone in the same Co or Bin but not in the same Platoon	Other	74	14	12
8.	Is there anyone in your squad you might lend money in an emergency?	Yes	It all depends	No	91	3	6
9.	Do the officers in the Co seem to know their stuff?	Yes	Yes, but or No, but	No	63	30	7
10.	How often, aside from meetings, does your Plt Sgt talk with you personally?	Often (weekly)	Once in a while (twice a month or so)	Never or hardly ever	62	16	23
11.	How often, aside from meetings, does your Plt leader talk with you personally?	Often (weekly)	Once in a while (twice a month or so)	Never or hardly ever	43	22	35
12.	How often, aside from meetings, does the CO talk with you personally?	Twice a month or more	Monthly or so	Never or hardly ever	39	13	48
13.	Do the NCOs in the Co seem to know their stuff?	Yes	Yes, but or No, but	No	53	42	5
14.	If we went to war tomorrow, would you feel confident going with this unit or would you rather go with another?	Wouldn't change	Do not know	Other unit	69	9	22

TABLE 18: QUESTIONS ASKED OF 2 COMPANY COMMANDERS IN EACH OF 20 BATTALIONS: "MODEL" HIGH COHESION (✓), NEUTRAL (○), AND LOW-COHESION (✗) ANSWERS WHICH SERVED AS STANDARDS FOR THE SCORERS; AND THE PERCENTAGE OF ACTUAL ANSWERS FALLING IN EACH OF THESE THREE CATEGORIES.

	QUESTIONS			MODEL ANSWERS			PERCENT		
	(✓)	(○)	(✗)	(✓)	(○)	(✗)	(✓)	(○)	(✗)
1.	How do you like being in this unit?	Like it	It's alright	Hate it	71	26	2		
2.	How do you like the soldiers in your company?	They're tops	They're okay	They're not much	86	14	0		
3.	How do you like the NCOs in your Company?	They're tops	They're okay	They're not much	55	38	7		
4.	How often do you see people from the Company after duty hours; for anything, business or pleasure?	At least weekly	At least monthly	Less than monthly	100	0	0		
5.	Who do you spend time with after duty hours, besides your family?	People from own Co or Bn		Other	79	0	21		
6.	What do you do to reward outstanding performance by your Co?	Time off, or other reward	Praise alone	Not applicable or not possible	98	2	0		
7.	Is there anyone in the company you might lend money in an emergency?	Yes	It all depends or it's against Regs	No way!	67	17	17		
8.	Are there any "duds" in the Co?	No	Yes, but....	Yes	10	19	71		
9.	Do the officers in this Bn seem to know their stuff?	Yes	Yes, but or No, but....	No	76	19	5		
10.	How often do you talk with the Bn Cdr outside of taking care of business?	Often (weekly)	Once in a while (twice a month or so)	Hardly ever	79	14	7		
11.	Do the NCOs in this company seem to know their stuff?	Yes	Yes, but or No, but....	No	64	29	7		
12.	Who would you go to first if you had a personal problem, like being in debt?	Someone in my same Bn		Other	71	0	29		
13.	What is the Company's peacetime mission?	Reasonable approximation	Fakes it	Doesn't know or joke answer	93	7	0		
14.	What actions have you taken to produce or maintain Company unity and team feelings?	Anything promoting group activity on or off duty	Nothing except having sections or squad room together	Nothing (no matter what the reason)	93	7	0		
15.	If we went to war tomorrow, would you feel confident going with this unit, or would you rather go with another?	Wouldn't change	Don't know	Other unit	95	0	5		
16.	Can you name all your squad leaders from memory?	Omits no one	Omits one	Omits more than one	76	14	10		
17.	How many Co parties or social events have taken place in the last three months?	Three or more	Two	One or less	21	29	50		
18.	Do you have teams in community sports leagues?	Yes, all or most	Some	Only a couple, or I don't know	91	7	2		
19.	Has any part of the Co been involved as a unit, or as a team, in any community sports leagues?	Yes	No	Hell no, or unfortunately yes	66	34	0		

TABLE 2: DISTRIBUTION OF JUNIOR ENLISTED SOLDIERS' COHESION SCORES BY TYPE OF UNIT

PERCENT SCORING AMONG
OF ALL JR ENLISTED SCORES

TYPE BN	LOW THIRD	MIDDLE THIRD	HIGH THIRD	N
ARMOR	23	32	45	44
ARTILLERY	34	36	30	114
ARMORED CAV	18	32	50	44
ENGINEER	42	33	25	57
INFANTRY	40	33	27	<u>15</u>
				275

TABLE 3: DISTRIBUTION OF JUNIOR ENLISTED SOLDIERS' COHESION SCORES BY TYPE OF JOB

PERCENT SCORING AMONG

CAREER MGT FIELD	LOW THIRD	MIDDLE THIRD	HIGH THIRD	N
COMMUNICATION	48	33	19	21
INFANTRYMEN	45	46	9	11
COMBAT ENGINEERING	43	35	22	40
FA (CANNON)	26	36	39	70
ARMOR	23	31	46	44
MECHANICAL MAINT	33	27	40	33
ADMINISTRATION	20	50	30	10
SUPPLY & SERVICE	30	30	40	<u>17</u>
				296

TABLE 4: DISTRIBUTION OF JUNIOR ENLISTED SOLDIERS' COHESION SCORES BY RANK (PAY GRADE)

PERCENT SCORING AMONG

RANK	LOW THIRD	MIDDLE THIRD	HIGH THIRD	N
PVT (E-1)	32	45	23	22
PVT (E-2)	43	35	22	46
PFC (E-3)	35	35	30	72
SP4 (E-4)	29	32	39	132
				272

TABLE 5: DISTRIBUTION OF JUNIOR ENLISTED COHESION SCORES BY TIME ON PRESENT JOB

PERCENT SCORING AMONG

MONTHS IN PRESENT JOB	PERCENT SCORING AMONG			N
	LOW THIRD	MIDDLE THIRD OF ALL JR ENLISTED MEN	HIGH THIRD	
1-6	41	24	31	75
7-12	30	40	30	80
13-24	26	32	42	62
25 +	30	30	40	<u>30</u> 247

TABLE 6: DISTRIBUTION OF JUNIOR ENLISTED SOLDIERS' COHESION SCORES BY RACIAL OR ETHNIC GROUP

PERCENT SCORING AMONG

RACE/ ETHNIC GROUP	LOW THIRD	MIDDLE THIRD	HIGH THIRD	N
CAUCASIAN	28	32	40	151
BLACK	35	36	29	102
HISPANIC	46	36	18	<u>22</u>
				275

TABLE 7: INTERCORRELATIONS OF NINE TRADITIONAL MEASURES OF BATTALION EFFECTIVENESS^a

	SPEARMAN R ^b								
	AGI	SQT	PT	ORT	AD	UCMJ	REUP	CRIME	
ARTEP	-.11	-.23	.09	-.14	.06	-.14	.32	-.15	
AGI		.17	.39	-.76	.10	.08	.07	.44	
SQT			.32	-.20	.00	.26	-.05	.08	
PT				-.48	.12	-.30	.35	-.43	
ORT					-.26	.20	.00	.59	
AD						.19	.24	.01	
UCMJ							.28	.38	
REUP								-.10	

a. SEE GLOSSARY FOR ABBREVIATIONS

b. Spearman rank order correlations show the extent to which scores on one of 2 measures allow prediction of scores on the second. A correlation of 1.00 implies perfect prediction, a correlation of 0.00 no prediction whatever. Minus signs mean only that high scores on one measure are associated with low scores on the second.

TABLE 8: SPEARMAN RANK-ORDER CORRELATIONS BETWEEN COHESION
AND MEASURES OF BATTALION PERFORMANCE (N=20 BATTALIONS) ^a

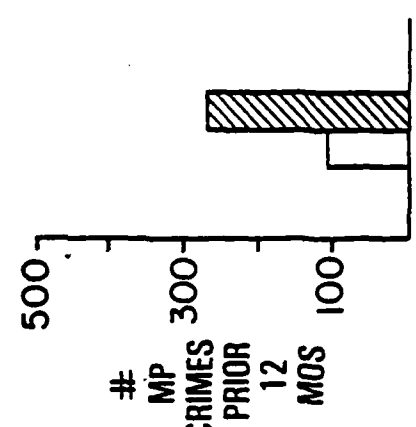
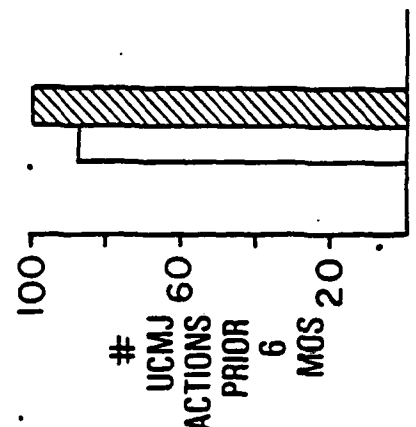
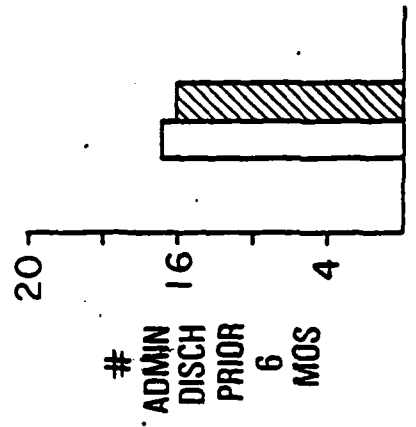
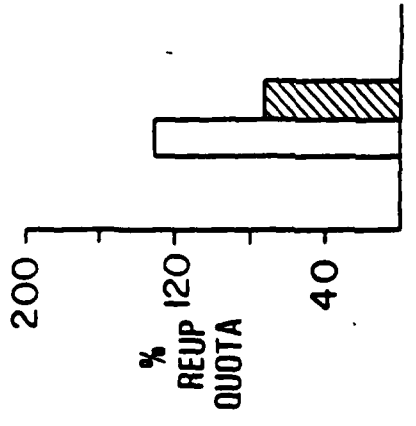
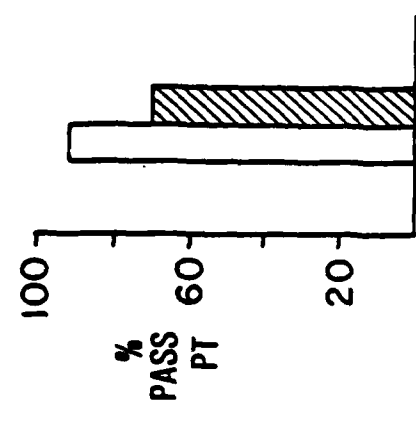
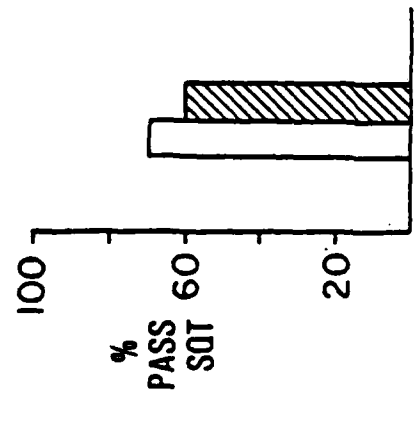
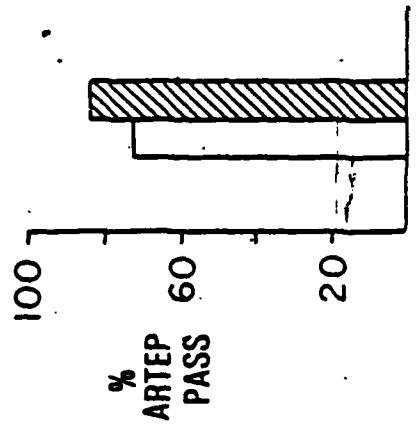
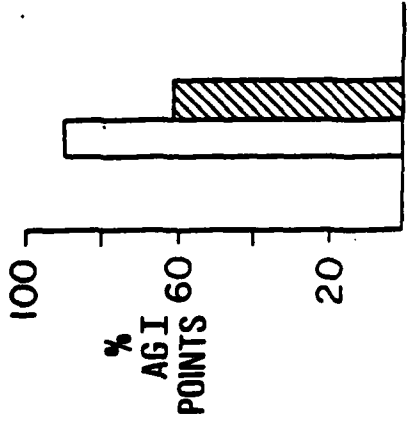
COHESION SCORES	ARTEP	AGI	SQT	PT.	ORT	UCMJ6	AD6	REUP6	CRIME	AVE RANK
Co Commander	-	.47	-	.64	.42	-	-	-	-.47	.68
1st Sergeant	-	.39	-	.48	.50	-.50	-	-	-.68	.49
Platoon Ldrs.	-	-	-	.52	-	-	-	-	-	.34
Platoon Sgts.	-	.57	-	-	-	-	.57	-	-	.11
Squad Ldrs	-	-	-	-	-	-	-	-	-	.08
Junior Enlisted	--	.38	-	.64	-	-	-	.38	-.47	.72
ALL	.10	.58	.30	.75	.52	-.29	.22	.32	-.69	.81 ^b

^a SEE GLOSSARY FOR ABBREVIATIONS

^b SEE FIGURE 9 FOR THE ACTUAL DATA RESPONSIBLE FOR THIS .81 CORRELATION

TABLE 9: RANK ORDER OF 20 BATTALIONS ON COHESION
AND PERFORMANCE (Correlation = 0.81).

UNIT COHESION	AVERAGE PERFORMANCE
1	1
2	2
3	6
4	4
5	8
6	10
7	7
8	5
9	3
10	15
11	14
12	11
13	6
14	13
15	16
16	17
17	12
18	9
19	20
20	17



 5 HIGHEST COHESION BNS
 vs 5 LOWEST

GLOSSARY OF ABBREVIATIONS/ACRONYMS

AD6	Number of "Administrative Discharges" (i.e., not medical or punitive, but prior to scheduled termination of the term of enlistment) in the previous six months.
AGI	Annual General Inspection. The week-long check of unit administration and maintenance performed by the inspector general and his team. The actual scores used were the percentages of sub-areas passed, weighted by the team by importance of sub-areas.
ARTEP	Army Testing and Evaluation Program, a standardized, unit level, graded field exercise testing the unit's ability to perform its wartime mission. Scores are % of missions passed.. Testing performed sometime in previous 12 months.
CO	Commanding Officer.
CRIME	The number of apprehensions, by local military police, of battalion members, for all crimes, during the previous 12 months.
EM	Enlisted Member. Soldiers in the lowest four pay grades.
1SG/FSG	First Sergeant, the highest ranking non-commissioned officer in the company.
ORT	Operational Readiness Test, a full scale "alert", in which the battalion is required to deploy to its wartime position with all equipment. A standard NATO rating system provides the scores (4 = best, 16 is worst).
PFC	Private First Class.

PLD Platoon Leader, generally a Second lieutenant.

PSG Platoon Sergeant, generally a Sergeant First Class (E-7).

PT Physical Training. Score used is % of unit members passing the standard physical fitness test administered during the week-long AGI.

PVT Private. Either of the two lowest pay grades.

REUP6 Reenlistments by battalion members in the previous six months, as a % of the battalion's assigned quota.

SLD Squad or Section Leader, generally a Sergeant (E-5) or Staff Sergeant (E-6), in charge of 5 to 15 men, depending on the type of unit.

SP4 Specialist Fourth Class, a soldier in pay grade E-4, in a position demanding technical but not supervisory skills.

SQT Skill Qualification Test, a standardized test of individual job skills. All members of one company were tested during the AGI on map reading, disassembling and reassembling the M-16 rifle, first aid for a leg wound, and use of the protective mask. The battalion's score was the % passing.

UCMJ Uniform Code of Military Justice. The law governing military members. Score for battalion was number of non-judicial and court-imposed punishments in the previous six months.

REFERENCES

- ARCOST Action Team. Improving stability and enhancing cohesion in the US Army; Strategy and compendium of initiatives. Washington, D.C.: Office of the Chief of Staff, Army, 1980.
- Cartwright, D. The nature of group cohesiveness. In D. Cartwright and A. Zander (Eds.), Group Dynamics. New York: Harper & Row, 1968.
- DuPicq, A. Battle Studies. Harrisburg, PA: The Military Service Pub. Co., 1958.
- Fiedler, F. Assumed similarity measures as predictions of team effectiveness. J. Abnormal and Social Psychology, 49, 381-388, 1954.
- French, R.L. Sociometric status and individual adjustment among naval recruits. J. Abnormal and Social Psychology, 46, 64-71, 1951.
- George, A.L. Primary groups, organization, and military performance. In R.W. Little (Ed.), Handbook of Military Institutions. Beverly Hills: Sage Publication Inc., 1971.
- Goodacre, D.M. The use of a sociometric test as a predictor of combat unit effectiveness. Sociometry, 14, 148-152, 1951.
- Grace, H. Conformance and performance. J. of Social Psychology, 40, 233-237, 1954.
- Hauser, W.L. A smaller Army? Adapting to the all-volunteer situation. Parameters, 9(3), 2-7, 1979
- Hemphill, J.K. and Sechrest, L. A comparison of three criteria of air crew effectiveness in combat over Korea. J. of Applied Psychology, 36, 323-327, 1952.
- Klein, M. and Christiansen, G. Group composition, group structure, and group effectiveness of basketball teams, in Loy, J.W. and Kenyon, G.S. (Eds) Sport, Culture, and Society. London: MacMillan Co., 1969.
- Likert, R. New Patterns of Management. New York: McGraw-Hill, 1961.

- Lott, A.J. and Lott, B.E. Group cohesiveness as interpersonal attraction. Psychological Bulletin, 64, 259-309, 1965.
- Marshall, S.L.A. Men Against Fire. New York: William Morrow, 1966.
- Melnick, M. and Chemers, M. Effects of group social structure on the success of basketball teams. Research Quarterly, 45, 1-8, 1974.
- Palmer, F. H. and Meyers, T.I. Sociometric choices and group productivity among radar crews. In Bibliography of Publications. Washington, D.C.: Human Resources Research Office, 1968.
- Richardson, F.M. Fighting Spirit. London: Leo Cooper Ltd, 1978.
- Stogdill, R. Group productivity, drive, and cohesiveness. Organizational Behavior and Human Performance, 8, 26-43, 1972.
- VanderVelden, L. Relationships among members, team and situational variables and basketball success: a social-psychological inquiry. Unpublished doctoral dissertation, Univ. of Wisconsin, 1971.
- Widmeyer, W.N. and Martens, R. When cohesion determines outcome in sport. The Research Quarterly, 49, 372-380, 1978.
- Zander, A. The psychology of group process. Annual Review of Psychology, 30, 417-451, 1979.

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