ARI Research Note 99-28

# Platoon Readiness as a Function of Transformational/Transactional Leadership, Squad Mores, and Platoon Cultures

**Bernard M. Bass and Bruce J. Avolio**
State University of New York at Binghamton



**Research and Advanced Concepts Office**
**Michael Drillings, Chief**

May 1999


U.S. Army Research Institute
for the Behavioral and Social Sciences

# REPORT DOCUMENTATION PAGE

| 1. REPORT DATE (dd-mm-yy) | 2. REPORT TYPE | 3. DATES COVERED (from. . . to) |
|---|---|---|
| May 1999 | Interim | 8/1/97-7/31/98 |

| 4. TITLE AND SUBTITLE | 5a. CONTRACT OR GRANT NUMBER |
|---|---|
| Platoon Readiness as a Function of Transformational/Transactional Leadership, Squad Mores, and Platoon Cultures | DASW01-96-K-0008 |
| | 5b. PROGRAM ELEMENT NUMBER 0601102A |
| 6. AUTHOR(S) Bernard Bass & Bruce Avolio (SUNY Binghamton) | 5c. PROJECT NUMBER 20161102B74F |
| | 5d. TASK NUMBER TA 1902 |
| | 5e. WORK UNIT NUMBER C01 |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) State University of New York at Binghamton Binghamton, NY | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences 5001 Eisenhower Avenue Alexandria, VA 22333-5600 | 10. MONITOR ACRONYM ARI |
| | 11. MONITOR REPORT NUMBER Research Note 99-28 |

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT *(Maximum 200 words)*:

The objective of this research is to determine to what extent military readiness of platoons and their leadership as measured by their performance in JRTC and NTC can be predicted by the transformational and transactional leadership of the Platoon Leaders, Platoon Sergeants, and the overall Platoon in garrison.

15. SUBJECT TERMS

Readiness, Leadership, Platoons, JRTC, NTC, transformational leadership, transactional leadership

| SECURITY CLASSIFICATION OF | | | 19. LIMITATION OF ABSTRACT | 20. NUMBER OF PAGES | 21. RESPONSIBLE PERSON (Name and Telephone Number) |
|---|---|---|---|---|---|
| 16. REPORT | 17. ABSTRACT | 18. THIS PAGE | | | |
| Unclassified | Unclassified | Unclassified | Unlimited | 64 | M. Drillings (703)617-8641 |

# CENTER FOR LEADERSHIP STUDIES

*for the research and development of the full range of leadership in individuals, teams, organizations and communities*

Binghamton University
State University of New York

SECOND INTERIM REPORT
AUGUST 1, 1997 - JULY 31, 1998

Contract DASW01-96K-008
U. S. Army Research Institute for the Behavioral and Social Sciences

# PLATOON READINESS AS A FUNCTION OF TRANSFORMATIONAL/TRANSACTIONAL LEADERSHIP, SQUAD MORES AND PLATOON CULTURES

Bernard M. Bass, P.I.
Bruce J. Avolio, Co-P.I.

Center for Leadership Studies - School of Management
State University of New York at Binghamton

TEL: 607-777-4028
FAX: 607-777-4188

E-Mail: Bernard M. Bass BBASS@Binghamton.edu
Bruce J. Avolio <LEAD3@Binghamton.edu>

September 21, 1998:wk/jm

## TABLE OF CONTENTS

ACKNOWLEDGMENTS

The principal investigators wish to thank retired U. S. Army officers, Lt. Gen. Walter F. Ulmer, Col. Michael Shaler, Col. Wilder M. Snodgrass, as well as LTC Lee Washington, Maj. James Reeves for their advice and assistance in the research described in this report. Also greatly appreciated was the assistance of Dr. Robb Most, Dr. Dong Jung, Yair Berson, Wendy Kramer, Sally Bowers, and Juliette Monet.

# INTRODUCTION

The First Interim Report described the results for the first 18 platoons. This Second Interim Report describes preliminary results for all 72 platoons studied. We summarize here the methodology that was used to collect the data, the excellent response rates for all measures, the psychometric work on our measures and preliminary results regarding the prediction of platoon performance at JRTC.

As noted in the First Interim Report, the objectives of this research were to determine to what extent the military readiness of platoons and their leadership as measured by their performance in JRTC and NTC, can be predicted by the transformational and transactional leadership behavior of the Platoon Leaders (PLs), Platoon Sergeants (PSGs) and the overall Platoon in garrison. Assessments in garrison were obtained approximately one month prior to platoons attending JRTC/NTC, using a 360 degree Multifactor Leadership Questionnaire (MLQ), which were completed by COs, XOs and FSGs, by other PLs and PSGs, and by platoon EMs. In addition to individual leadership ratings, we also collected ratings focusing on the collective leadership behavior of the company and platoons in garrison. These ratings were gathered from the same sources described above using the Team Multifactor Leadership Questionnaire (TMLQ). Results presented in this report were generally in line with a meta-analysis by Gaspar (1992) of mainly concurrent military findings showing that transformational leadership correlated .53, .46 and .57 with objective outcomes and transactional leadership correlated .46, .26 and .32 with objective outcomes of performance, when using superiors' ratings of platoon leadership.

In this report, we summarize the second year of our three-year platoon leadership study. During this year, we have had the opportunity to complete all of the data collection in garrison and at JRTC (Joint Readiness Training Readiness). The survey data collected on leadership and

our criterion measures collected from the Observer Controllers (O/C) raters at JRTC and National Training Center (NTC) have now all been entered into data files and verified. Qualitative coding of O/C rater comments on the technical proficiency of the platoon and its behavioral leadership has also been coded and entered into data files.

## METHOD

### Sample

Seventy-two platoons, 72 Platoon Leaders and 72 Platoon Sergeants provided the data for analysis. A total of 2,136 respondents participated in this study. Respondents belonged to 4 brigades: the 2nd and 3rd brigades of the 101st Airborne Air Assault Division; the 2nd brigade of the 10th Mountain Division (Light); and the 2nd brigade of the 82nd Airborne Division. Twenty-four companies with a total of 72 platoons from these brigades participated in this study. Respondents included all ranks, from company leaders to enlisted members of the platoon. To avoid possible variance in ratings and performance, due to technical differences between the 3 light and one heavier infantry unit in each company, it was decided to concentrate data collection on the 3 light infantry rifle platoons in each company, excluding the heavier ordinance unit within the companies. In addition, performance ratings were obtained at JRTC/NTC from 126 observers/controllers and 53 COs, XOs, and FSGs. For the analyses in this report, the CO, XO and FSG, or Company Cadre, were labeled as "Above" the PL and PSG were labeled "Peers" and all other EM's were labeled as "Below" the PL and PSG.

### Procedure

Leadership data collection was done separately in the home base garrison of each of the above brigades. Additionally, performance data for the 3rd brigade of the 101st Airborne Division

was collected at NTC, and at JRTC for the other three brigades at separate rotations of each.

We have divided our discussion concerning the procedures used to collect leadership ratings and performance data collection at JRTC/NTC. We begin with a discussion of the procedures for garrison data collection.

**Measures of Leadership**

One of the fundamental assumptions for this project was that leadership measured at multiple levels would provide a more accurate estimate of a platoon's overall leadership potential and performance in near battle conditions simulated at JRTC/NTC. The multiple levels included surveys of the PL's leadership, the PSG's leadership, the collective leadership of all members of the platoon and the leadership characterizing the company culture. Survey measures that assess each of these levels and tap into what Bass and Avolio (1994) have referred to as a "full range" of leadership, already existed but were modified for the current military setting. Modifications to the survey measures generally included rewording items by the consultant team of content experts, to "fit" within the Army context. Most items remained unchanged in the survey measures, as noted in the first interim report.

The dimensions used for the O/C ratings, which measured the individual and collective performance of the leaders and platoon participating in 11 combat simulated missions in JRTC/NTC respectively, were created specifically for this project. Ratings of 20, then refined to 14 behavioral items, based on Army leadership doctrine (FM 100-22) were developed to assess the Platoon Leader's and Sergeant's individual leadership style in JRTC/NTC. Additionally, two overall scales assessed the platoon's performance of its mission given the conditions it faced and relative to other platoon's performance at JRTC. Answers were solicited to open-ended questions about platoon performance and PL/PSG relationships. Lastly, we have now begun an

extensive qualitative analysis of the comments written down by O/C raters on the JRTC/NTC "score cards", focusing on the relationship of the Platoon Leader and Sergeant, behavioral incidents describing the leaders' behavior with followers, the proper use of Army procedures, equipment and technology. Some preliminary results from these qualitative analyses are described in this report.

**Garrison Data Collection**

Table 1 contains the overall respondent participation rates in the research project. Table 2a contains the numbers and types of instruments that were collected in garrison. The MLQ and TMLQ data were gathered for all personnel of each of 72 platoons and the company leaders (CO), executive officers (XOs) and first sergeants (FSGs) of the 24 companies from all brigades. Data were collected in garrison approximately one month prior to rotation of the personnel to JRTC and/or NTC.

In order to control for order effects, half of the respondents below the PL and PSG received in a folder the MLQ or TMLQ in alternating order, or the MLQ for Platoon Leader (PL) and for Platoon Sergeant (PSG) in alternating order. The CO, XO and FSG were each asked to complete MLQs, on all 3 PL's and 3 PSGs of the 3 rifle platoons in their company, again presented in folders to them in alternating orders. The PLs and PSGs completed an MLQ on each of their peers in the other two platoons of their company and self-MLQs. Table 2a shows the collection and return rates by company and platoon. We were unable to achieve 100% return rates due to factors beyond our control, including conflicting assignments, vacations and sick call.

As just noted, each EM platoon member below the PL and PSG completed an MLQ on one *or* the other as well as a TMLQ on either the platoon *or* the total company. This procedure

made it possible to correlate MLQ and TMLQ responses eliminating same source bias. The number of respondents here for platoon and company was equalized. Anonymity was promised to all respondents and maintained. There was no individual feedback of results provided to the PL or PSG themselves or to their superiors, peers or subordinates. Anyone who chose not to participate could sit quietly until the platoon was dismissed, and then they were asked to turn in uncompleted questionnaires without being identified. Of the 2,136 respondents, 10 chose this option.

Prior to beginning the survey distributions, an orientation letter (see Appendix C1 and C2 in the First Interim Report) was read to the assembled respondents by COL(R) Snodgrass, who proctored the administration of all of the questionnaires assisted by either LTC Washington or MAJ Reeves. Each respondent found his appropriate packet of questionnaires at his place upon arrival. The excellent response rates can be attributed to the cooperation received from personnel at all levels on the various bases, and to the efficiency in the organization of the data gathering process supervised by COL-(R) Snodgrass.

**Field Performance Data Collection Process**

Approximately one month after the MLQ/TMLQ had been collected in garrison, three of the brigades engaged in tactical mission exercises at the JRTC at Ft. Polk, LA, while one brigade participated in exercises at the National Training Center (NTC) at Fort Irwin, CA. Ratings were obtained from experienced observer/controllers (O/Cs), and for the $2^{nd}$, $3^{rd}$, and $4^{th}$ data sets from COs, XOs, and FSGs. The O/Cs were oriented by COL(R) Shaler at a special meeting with them several days prior to their moving into the field with their platoons. At the end of each of three phases, the O/Cs completed the attached performance rating form (see Appendix A). Cadre (CO, XO, FSG) completed the same form once at the end of the JRTC rotation. As described in the

First Interim Report, for the first set of 18 platoons, MLQ ratings of the PL and PSG were completed before and after rotation to assess the rate-rerate reliability of MLQ scores.

The JRTC (NTC) results were to serve as the criterion of platoon effectiveness in near-combat conditions, as well as criteria for PL and PSG effectiveness as leaders (PLE and PSGE). Based on analysis of the first set of data (obtained at Fort Campbell), we modified the structure of the rating card to include more qualitative open-ended questions, and eliminated several items that measured PL and PSG leadership performance. There was also one less item included that assessed platoon performance. These items were trimmed since the 20 original PL items were highly intercorrelated as were the 20 PSG items. The number of questions assessing overall platoon effectiveness was also reduced from 3 to 2 for the same reason. The O/C Platoon Performance forms used in the 2nd, 3rd and 4th sets for 54 platoons, included two ratings about the platoon's observed effectiveness. Those ratings (See Appendix A) were as follows:

- Tactical Mission Accomplishment (including weather, terrain, support, and Opposition.)
- Overall Performance as compared to other platoons.

Questions A and B, each contained five anchors and were scored 0 = lowest anchor; 1= low anchor; 2 = middle anchor; 3 high anchor; and 4 = highest anchor.

There remained after the trimming of 6 items, 14 items that assessed the behavior of the PL and PSG. The items measured each leaders' consistency with Army policy and prescriptions for effective Platoon Leadership in combat as judged by our military consultants.

The qualitative questions included sections about the platoon, the PL, the PSG, and the PL-PSG relationship. For platoon effectiveness, raters were asked to identify the 3 strongest and 3 weakest points. Similarly, raters were asked to comment on the PL and PSG strong and weak points, and how well they worked together during the two-week period.

Except for the NTC rotation (where one O/C was assigned), two O/Cs were assigned to accompany the platoons into the field, and to serve as raters for the 18 platoons. Evaluations of each platoon were collected from both raters at the end of the first, middle and last mission rotation. Generally, these missions included a defense, a movement to contact and an attack. A total of 339 ratings were obtained from 126 O/Cs and 159 cadre ratings of platoon performance. (The cadre ratings were to be as a confirmatory check against the O/C ratings.) O/Cs also provided the platoons with an after-action review at the end of each phase.

**Psychometric Measures**

There have been both preliminary quantitative and qualitative analysis completed on the data collected in garrison and at JRTC (NTC).

**Description of the Quantitative Analysis:** We began our analyses by trimming data to eliminate respondents whose ratings reflected a response pattern with little or no variance at all in their responses to the surveys. Less than 1% of the respondents were eliminated. We then conducted a more in-depth evaluation of both our survey and criterion measures. Specifically, we tested the factor structure of the MLQ and TMLQ, and found support for a six- factor model for the MLQ and a five-factor model for the TMLQ, as described below.

**Factor Structure:** Our first step was to confirm the factor structure on the first set of data collected from 18 platoons at Fort Campbell. We employed confirmatory factor analysis (CFA) using LISREL VIII. CFA is a widely used technique for testing the psychometric properties of measurement instruments, in that it tests a pre-specified factor structure and the goodness of fit of the resulting solution. LISREL compares an implied covariance matrix with the observed matrix and estimates parameters based on the fit between these matrices. The fit is represented in indices such as the Goodness of Fit Index (GFI), the Incremental Fit Index (NFI2), and the NCNFI (Non

Centralized Normed Fit Index). For these indices, values above .9 are indicative of an adequate fit. We also included the Root Mean Squared Residual (RMSR), for which acceptable fit should be less than .05, and the change in Chi-square value associated with testing each of several comparison models.

**Reliabilities:** After confirming the factor structure for the MLQ and TMLQ surveys, we then examined the reliabilities of the MLQ and TMLQ scales, as well as the inter-rater reliabilities of the JRTC performance data. We also provide in this report the frequencies and descriptive statistics on all of our measures.

**Relationships:** We then proceeded by testing the relationships between the leadership ratings at multiple levels (PL, PSG, Platoon & Company) and the JRTC performance scores using correlational analysis, regression analysis and tests for mean differences. The NTC data for 18 platoons was not analyzed here because only a single O/C provided the criterion ratings for these respective platoons. Also, since the process for measuring platoon performance differed somewhat between JRTC and NTC, we decided for the purposes of this report to focus only on JRTC data for the linkages with garrison measures.

In order to test the extent to which the leadership measures obtained in garrison predicted performance at JRTC, as noted earlier, we compared the leadership measures from top and bottom performing platoons, as measured by the O/C performance indicators. We summed the ratings assigned to 54 platoons on each of the 5 performance measures mentioned above, and identified the top 9 and bottom 9 platoons with the highest and lowest total scores across all performance measures. This analysis was conducted to provide a preliminary evaluation of our ability to use leadership assessments to differentiate effective versus ineffective platoons. A more appropriate selected examination comparing the 24 platoons above and below the median in the

order of effectiveness is presented later in this report.

**Description of the Qualitative Data Analysis:** In addition to testing the quantitative performance data, we also examined qualitative results, using trained research assistants to code data concerning the quality of the PL-PSG relationship. Specifically, each rater went through training on our transformational leadership model, and then was asked to independently evaluate the comments from the O/C raters regarding the question that refers to the quality of the relationship of the PL-PSG. The qualitative codings were repeated for each of the three JRTC data sets. The interrater reliabilities were all above .88.

Dr. Avolio, Mr. Berson and COL (R) Snodgrass went through all of the qualitative data from the O/C raters to identify and evaluate the strong and weak points for the platoons, PL, and PSG. Col. Snodgrass also developed a comprehensive list of categories representing both interpersonal aspects of performance (e.g., teamwork) and technical military expertise (e.g., navigation) that could impact on platoon performance. Each platoon was scored on these categories, and then was compared in terms of the top and bottom platoons on overall effectiveness. These categories are currently being examined in terms of how they relate to the leadership survey ratings of the PL and PSG collected in garrison.

## RESULTS

In this section, we review in more detail the steps that were taken to prepare the survey instruments and criterion measures, while also examining how they've predicted platoon performance at JRTC. In terms of the analysis of survey measures, we used all 72 platoons to test the psychometric properties of our survey measures. However, when we focused on the link between platoon leadership and performance, we used only the 54 platoons that participated in JRTC.

## Model Testing and Reliability of Scales

Our first goal was to determine the degree to which we could measure the factors comprising what was referred to above as a "full range" model of leadership.

**Factor Model**: Results from the initial CFAs conducted with the first 18 platoons indicated support for a six factor model of leadership underlying the MLQ, and a six factor model representing the TMLQ. To achieve these results in our first data set, we used the modification indices generated by LISREL, to trim items from scales that loaded across multiple factors. The trimming of items reduced the original MLQ/TMLQ survey from a total of 36 to 23 items. Using those 23 items, we found satisfactory fit indices for a six factor MLQ model, which included the following scales: Inspiring, Intellectually Stimulating, Individualized Consideration, Contingent Reward, Active Management-by-Exception, and Passive Avoidant Leadership. A summary of these results is presented in Tables 3a and 3b. Sample items for each of the six scales are presented in Appendix B.

We then proceeded to cross-validate our findings from the initial 18 platoons, with the remaining data from the 54 platoons. In addition, we attempted to generalize the six-factor model to the platoon level, using the TMLQ to determine whether the same six factors could be utilized to assess the collective leadership exhibited by platoons.

Results presented in Table 4, summarize our findings from the second set of confirmatory factor analyses. Several potential models were compared to determine which model had the most parsimonious fit. Each model was derived directly from literature on the leadership surveys used in this study, and earlier factor analytic results summarized by Avolio, Bass and Jung (1998). An inspection of Table 4 indicates that the best fit was again for the six-factor model with the MLQ survey. As shown in Table 4, although the fit indices for the six and four factor models were

similar in absolute terms, adding in the two additional factors did not deteriorate the fit of the model at all, and thus the six factor model can be interpreted as being more comprehensive, as well as parsimonious. Stated differently, the loss of degrees of freedom associated with estimating the six-factor model for the MLQ, did not affect the level of fit obtained, providing further evidence to support the six-factor model.

Presented in Table 5, are findings regarding the tests of the TMLQ survey. The pattern of results was similar for the group level platoon leadership measure, except that Contingent Reward and Individualized Consideration combined into one factor, which was labeled "Developmental Exchange". Generally, the model fit for the five-factor model, nearly replicated results reported above for MLQ leadership ratings.

In Tables 6 and 7, we provide a summary of the descriptive statistics for the six-factor MLQ model using ratings for the PL and PSG. Each table presents preliminary statistics for overall ratings by all sources, and also broken down for each rater source including ratings from Below, Peer, Above and Self-evaluations.

**Platoon Leaders:** Several patterns are noteworthy for MLQ ratings of the PL. First, intercorrelations among the scales replicated earlier patterns with the MLQ survey. Specifically, the transformational ratings were positively intercorrelated, and also correlated positively with ratings of contingent reward leadership. Correlations between transformational, contingent reward and active management-by-exception were also similar to earlier results, indicating either near zero or negative correlations with active management-by-exception. Finally, correlations between both transformational and contingent reward leadership ratings with passive avoidant leadership were significant and negative. Correlations between active management-by-exception and passive avoidant leadership were low positive, as predicted by Bass and Avolio (1994).

Reliability estimates for the six-factor model were generally at or above acceptable levels with few exceptions. It appears there is a consistent problem with the management-by-exception scale, which had only two items that loaded properly on this scale. We are currently exploring different configurations of this scale to determine whether we can increase its internal consistency.

Another observation based on results presented in Table 6, was that the self ratings generally produced lower estimates of internal consistency. Results with the self-MLQ ratings were similar to those that have been reported in earlier work by Bass and Avolio (1990; 1993).

**Platoon Sergeants:** Moving to Table 7, we provide a summary of results for ratings of PSGs. Again, we can see a similar pattern in terms of the mean ratings, standard deviations, measures of internal consistency and intercorrelations among the scales. We also found the same problem with the management-by-exception scale for all rater sources with the PSG's ratings. Additionally, in some but not all cases, the reliabilities were lower for self-ratings than reported above.

**Platoon/Company Climate:** Tables 8 and 9 present the results for the TMLQ. As noted above, the best model fit for this survey was a five versus six-factor model. Intercorrelations among the factor scales generally replicated results at the individual level, showing positive correlations among the transformational and transactional scales, lower positive correlations with management-by-exception and highly negative correlations with passive avoidant leadership. One notable exception was the stronger negative correlation observed between ratings of active management-by-exception and passive avoidant leadership[1].

**Agreement Among Sources of MLQ Ratings.**

[1] There are also comparable ratings of the 24 companies by half the EMs which have not yet been analyzed.

MLQ self-ratings by the PLs and PSGs were correlated to their source: Below, Peer or Above. Results of these analyses are presented in Table 10. The pattern of correlations indicated there was generally low agreement between self and other ratings. In absolute terms, the highest relationships were for self-ratings generated by the PL with their superior's ratings for four out of the six MLQ scales.

As seen in Table 11a, results of mean comparisons between Self and Other sources of ratings indicated that for Platoon Leaders the largest differences between their ratings occurred with the Self and source ratings from Below. For Platoon Sergeants, however, there was more variation in the differences as can be seen in Table 11b.

Inferences from Table 12 about the effects of source of ratings include the following observations:

- Peers and Below agree about the Active Management By Exception of PLs (.46) as do sources from Below and Above (.33).
- There is moderate agreement between Peers and Below about the IL of PLs (.27) and strong agreement between Peers and Above about the PA leadership of PLs (.52).
- There were significant negative correlations obtained between the transformational leadership ratings of PLs by Peers and those above the PLs (-.41, -.33, -.29). The same is true for CR (-.39). This might indicate that some kind of suppressor effect could be obtained, when combining Peers and those above to predict JRTC criterion performance.
- For PSGs, the agreement was moderate between those Below and Above on the transformational and CR ratings, less so for MA and Peer-Below correlations. Otherwise the three sources were low, but significant in agreement.
- As can be seen in Table 13, there was moderate agreement on the TMLQ factor scores

between Peers and those Below in their views of the platoon members as a whole on all but MA (.47, .37, .46 and .37). These results indicate that platoons have reliably different leadership climates in the eyes of their leaders and members.

- As can be seen in the Table 14 from the means differences by source of ratings, the cadre ratings from Above assigned higher PL ratings in the transformational and CR scores than did the Peers, and the Peers assigned higher PL ratings than did those from Below. Results were reversed for MA, but no discernable trends were found for PA leadership.
- Referring again Table 14, the cadres Above and Peers assigned higher transformational and CR ratings while for PSGs, MA and PA were reversed or lower.

Taken together, these results have implications for the use and interpretation of 360 degree ratings of PLs and PSGs. Specifically, self ratings tend to provide a very limited picture of the leadership style of PL and PSGs. Also Peer ratings of PLs correlated negatively with Above ratings, suggesting that the leadership styles observed by these two different sources may not be similar or at least interpreted in the same way. Finally, there tended to be more agreement among the PSGs ratings across sources, than found with the PL's ratings. More detailed analyses will be completed in the coming year.

**Criterion Performance:** A summary of the ratings of platoon performance (n=54) are presented in Table 15 and Figure 1, broken down by the 3 phases in JRTC. The PL and PSG scales represent the 14 items for each leader that were described earlier. The A and B scales were the two overall measures of platoon performance. Specifically, the A scale represented an absolute measure of platoon performance, while the B scale was a comparative measure, providing an indication relative to other platoons performance in JRTC, how the O/C raters evaluated the platoon.

Reliabilities for the individual leader JRTC ratings were very high as shown in Table 15. In addition, the mean ratings for each of the four criterion measures, across the three phases comprising JRTC, demonstrated a slight increase in mean evaluations from the first to the third phase. However, this upward trend in ratings was not significant. Interrater agreements are also presented in Table 15 for the two O/C raters. Although there was some variation in level(s) of agreement across phases, all but four values were above .60. The average agreement across all phases and measures was .64.

We present in Table 16, the intercorrelations between the 4 criterion ratings generated in JRTC, as well as interrater agreements for the O/C raters. The pattern of intercorrelations among these scales indicated that the four measures were tapping into different aspects of platoon performance. We also present in Table 16, the relationships between the quantitative and qualitative measure of the relationship between the PSG and the PL. The qualitative rating was determined by coding comments made by O/C raters about how well the PSG and PL interacted during JRTC. As shown in Table 16, the qualitative scores correlated significantly and positively with the quantitative ratings generated by the O/C raters in JRTC.

Agreement levels between the two O/C raters' evaluations of the respective platoons were generally high and all above .7, except for ratings of the PSG.

**Platoon Leadership Ratings in Garrison and JRTC Performance**

In Tables 17 and 18, we present the relationship between ratings of leadership on the MLQ for both the PL and PSG, with outcome ratings obtained from the TMLQ. Again, we provide here a breakdown of the ratings of each leader by rater source. It is important to note that both surveys were completed in garrison, however they were completed by independent sources as noted earlier. Thus the correlations presented in Tables 17 and 18 are free of same-

source bias.

PL's ratings were consistent in support for the hierarchical model put forth by Bass and Avolio (1994), concerning the relationship of transformational, transactional and passive leadership with ratings of performance. Specifically, there were generally positive and significant correlations between the transformational and contingent reward leadership ratings and ratings of platoon effectiveness from Below. Correlations with management by exception were near zero and negative, while for passive leadership the relationships were more negative with ratings of platoon effectiveness. Overall, the same pattern of results was replicated for the PSG leadership ratings. At least in the eyes of their followers, both PLs and PSGs leaders who exhibited more transformational and contingent reward leadership were also seen as being part of a more effective platoon in garrison.

**Platoon Leadership in Garrison Related to Platoon Effectiveness at JRTC**

To compare platoon performance taking into consideration all of the MLQ scales, we ran three sets of Multivariate T-tests. For Above, Peer and Below ratings for the PL and PSG, respectively. These preliminary T-test comparisons were done by using a median split on our five JRTC performance measures to create the Top and Bottom platoons. Simultaneously taking into consideration all six leadership scales, significant multivariate effects were found for Above ratings of the PL ($T(6.45) = 3.05$, $p<.01$) and a marginally significant effect for Below ratings of the PL ($T(6.47)=1.52$, $P<.09$).

Moving to univariate results, for the Above ratings, the PL in the top platoon was evaluated as more inspirational ($F=8.66$, $p<.003$), intellectually stimulating ($F=4.69$, $p<.02$) using contingent reward leadership more effectively ($F=2.73$, $p<.05$) and less passive/avoidant ($F=2.22$, $p<.07$). All of these findings were in the expected direction.

Turning to the Below ratings, the PL leading the top platoons was rated as more inspirational ($F=4.48$, $p<.02$), intellectually stimulating ($F=3.47$, $p<.03$), individually considerate ($F=5.84$, $p<.01$) using contingent rewards more effectively ($F=4.44$, $p<.02$) and as being less passive/avoidant ($F= 6.80$, $p<.01$).

For presentation purposes, we took the top 9 and bottom 9 platoons to visually compare their respective leadership profiles. Tables 19 through 24 present comparisons of the top ($n = 9$) and bottom ($n = 9$) performing platoons in JRTC for PL and PSG MLQ ratings. The comparisons of predictions of JRTC performance reported in these tables are again by rater source for top versus bottom platoons. In absolute terms, the pattern of mean results was consistent with the main predictions for this research project. As noted above, platoons led by PLs who were evaluated by superiors and subordinates as more transformational, who used more contingent reward leadership, and were less passive avoidant, were evaluated by O/Cs as being part of higher performing platoons at JRTC. Similar patterns were observed for PSG evaluations of their leadership.

Correlations between the PL(PSG) MLQ ratings and the five separate JRTC criterion measures are presented in Tables 25 and 26. The general pattern of correlations for the PLs indicated that the Above (Below) leadership ratings were generally more predictive of JRTC performance.

Multivariate T-tests using Below and Peer ratings of the Top and Bottom platoons based on a median split on performance were performed next. The tests did not yield any significant overall differences for the Top and Bottom platoons.

Tables 27 and 28 provide comparisons of top and bottom platoons for the five factors comprising the TMLQ survey. Ratings for this survey were collected from both Peers and

followers (Below). As shown in each respective table, there were no differences in mean ratings for either the Peer or ratings from Below comparing the top and bottom platoons.

Going back to Tables 25 and 26, results are presented regarding the relationship between MLQ ratings of the PL and PSG with the qualitative scores of their relationship observed by the O/C raters in JRTC. There are several noteworthy relationships reported in these tables. First, while the PL's Above ratings were generally more predictive of the PL and PSG relationship, as compared to Peer and Below ratings, the PSG's Peer ratings were most predictive of the quality of their relationship observed by O/Cs in JRTC. We also examined differences in the quality of the PL-PSG relationship in Table 29, by again comparing the top 9 and bottom 9 platoons. There was large mean difference observed in ratings of the quality of their relationship for the Top versus Bottom platoons. The top platoons exhibited a significantly higher quality PL-PSG relationship at JRTC as compared to the bottom platoons.

Table 30 summarizes preliminary regression results for both PSG and PL MLQ ratings predicting JRTC performance. Results are presented for each of the 5 JRTC performance measures. There were a number of significant predictors of performance when examining Peer and Above ratings on the MLQ. For Peer ratings, the transformational leadership ratings of the PSG significantly predicted two measures of JRTC performance, while passive PL leadership significantly and negatively predicted two measures of JRTC performance. For MLQ ratings from Above, the transformational leadership of the PL, significantly predicted the platoon's overall performance (B). PSG's ratings of transformational leadership positively predicted the PL's leadership performance ratings in JRTC. Management-by-exception of the PL positively predicted PSG leadership performance ratings obtained from the O/C raters, while contingent reward leadership ratings for the PL had a strong and significant positive relationship with the

quality of relationship observed between the PSG and PL. Passive PL leadership also negatively predicted the PSG leadership ratings provided by the O/C raters.

## PLANS FOR THE THIRD YEAR

A summary of the analyses to be completed in the third year of the platoon leadership program using the available data collected during the first two years include the following:

Since they have different contacts and relations with the PLs and PSGs, the PL and PSG factor scores will be calculated and correlated by source: CO, XO, PSG, Peer PLs and Peer PSGs. We hypothesize that the C/Os will prove to provide the most accurate MLQ predictors of O/C JRTC performance ratings. In the same way, an intercorrelation matrix between squad leaders (SLs) fire team leaders (FTs) and platoon members (PMs) will be calculated including the MLQ factor scores and the Effectiveness (EFF), Satisfaction (SA) and Extra Effort (EE) scores in garrison and the TMLQ scores of Satisfaction (SA), Effectiveness (EFF), Potency (POT), and Cohesion (COH). Trends in means, S.Ds and correlations will be provided.

Each score will be correlated against OC ratings of A, B, PLE, PSGE and PL/PSG quality of relations.

Although preliminary analyses suggest otherwise, we will re-examine the impact on predictive accuracy, garrison-to-JRTC, of tenure, contact time, and familiarity with PL and PSG.

The original 45 MLQ items will be refined to develop a single index to predict JRTC performance by completing an item analysis for MLQ ratings by COs as a possible tool for COs to identify PLs and PSGs in future who need more advance preparation for JRTC.

Regression analyses will be completed in nests as follows to predict JRTC performance of PLs, PSGs:

1. aPeer aCO + bXO+ cFSG= JRTC(A), (B), PLE, PSGE, PL/PSG

2. PL + b Peer PSG = JRTC (A) etc.

3. aSquad Leaders + bFire Teams + cPlatoon Members = JRTC (A) etc.

4. aAbove + b Peers + c Below = JRTC (A) etc.

5. Differences among first order correlations as well as multiple R's will be examined.

6. Basic patterns of relationships will be examined using canonical correlation by comparing panels of the MLQ factor scores with JRTC panels to determine optimum linkages by source ratings.

| Factor score Panel | vs | JRTC Panel |
|---|---|---|
| IL | | A |
| IS | | B |
| IC | | PLE |
| CR | | PSG |
| MA | | PL/PSG |
| PA | | |

Agreement between CO, XO and FSG and OCs about A, B, PLE, PSG, PL/PSG performance at JRTC will be calculated.

Effects of company factors scores (N=18) will be examined using the TMLQ. Company scores will be correlated with the panels of JRTC scores.

Correlations of quantitative MLQ and TMLQ will be used to predict qualitative JRTC outcomes.

Self and Other (Above, Peer and Below) congruence scores by source will be calculated using a regression analysis procedure developed by Edwards (1993), to examine how each rater source and combination predict JRTC performance.

Since there were some differences in performance patterns observed across the three phases of

JRTC, we will be examining how leadership ratings collected in garrison, predict performance in Phases 1 versus 2 versus 3.

A causal model will be developed in which we include multiple levels of leadership (MLQ and TMLQ) predicting perceptual (e.g., effectiveness) and O/C evaluations of performance. Since these analyses will be completed at the group level, we will use Partial Least Squares analysis.

We will be examining whether the amount of time spent in the platoon and how the leader was rated impacted on predictions of JRTC/NTC performance.

Other activities for the Third Year of the project include the following:

We will examine the possibility and utility of constructing and validating an MLQ leadership disciplinary index.

The principal investigators will visit Ft. Irwin and Ft. Polk to meet with focal groups of O/Cs to discuss anomalies in the results and to observe JRTC/NTC.

We will complete a set of appropriate technical reports summarizing the analyses described above, along with the final report.

## CONCLUSIONS

Our results suggest that as we hypothesized, PL and PSG transformational leaders are more effective in garrison and again in JRTC combat readiness missions, particularly if the garrison assessments are from Above for the PLs and from Below for PSGs. In the third year, we hope to add to our understanding of why transformational leaders have this impact on the performance of their platoons. We also want to strengthen arguments to this effect with the strong qualitative findings we have uncovered so far and to achieve a "triangulation" with outcomes of quantitative and qualitative predictions.

## REFERENCES


Avolio, B.J., Bass, B.M. & Jung, D. (In Press). Reexamining the components of transformational and transactional leadership using the Multifactor Leadership Questionnaire. Journal of Organizational and Occupational Psychology.

Bagozzi, R.P., Yi, Y., & Phillips, L.W. (1991). Assessing construct validity in organizational research. Administrative Science Quarterly, 36, 421-458.

Bass, B.M. & B.J. Avolio. (1997). Platoon readiness as a function of transformational/transactional leadership, squad mores and platoon cultures. US Army research Institute for the Behavioral and Social Sciences, Second Interim Report, Center for Leadership Studies, School of management, State University of new York at Binghamton.

Bass, B.M. & B.J. Avolio. (1994). Improving organizational effectiveness. Thousand Oaks, CA: Sage.

Bass, B.M & B.J. Avolio. (1993). Transformational leadership: A response to critiques. In M.M. Chemers & R. Ayman (Eds.) Leadership theory and research: Perspectives and directions (pp.49-80). New York: Academic press.

Bass, B.M & B.J. Avolio. (1990). The implications of transactional and transformational leadership for individual, team and organizational development. In R.W. Woodman & W.A. Passmore (Eds.) Research in organizational change and development. Greenwich, CT: JAI Press.

Bentler, P.M., & Bonnett, D.G. (1980). Significance tests and goodness of fit in the analysis of co-variance structures. Psychological Bulletin, 88, 588-606.

Edwards, J. R. 1993. On the use of polynomial regression equations as an alternative to difference scores in organizational research. Academy of Management Journal, 36, 1577-1613.

Gaspar, S. (1992). Transformational Leadership: An integrative review of the literature. Doctoral Dissertation. Western Michigan University, Kalamazoo, MI.

Medsker, G.J.,Williams, L.J., & Holohan, P.J. (1994). A review of current practices for evaluating causal models in organizational behavior and human resource management research. Journal of Management, 20, 439-464.

Mulaik, S.A., James, L.R., Van Alstine, J., Bennett, N., Lind, S., & Stillwell, C.D. (1989). An evaluation of goodness-of-fit indices for structural equation models. Psychological Bulletin, 105, 430-445.

# TABLES

**Table 1:**
**Respondent Participation Rate**

| | |
|---|---|
| 72 Platoons | 100% |
| 24 of 24 Co. Commanders | 100% |
| 24 of 24 Co. First Sergeants | 100% |
| 22 of 24 Co. Executive Officers | 92% |
| 69 of 72 Platoon Leaders | 96% |
| 71 of 72 Platoon Sergeants | 98% |
| 1663 of 1953 Platoon Members | 86% |
| 125 of 126 Observer/Controllers | 99% |

**Table 2a:**

# Number Of Surveys Completed and Response Rates From 72 Light Rifle Platoons Of 24 Companies.

**For the Multifactor Leadership Questionnaire:**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Platoon | Self | 70 | Above | 187 | Peer | 115 | Below | 710 | D | 32 | Total: 1114 |
| Platoon | Self | 69 | Above | 194 | Peer | 131 | Below | 669 | D | 24 | Total: 1087 |

**For the Team Multifactor Leadership Questionnaire:**

| | | |
|---|---|---|
| Company | 391 | 18 per company |
| Platoon | 1221 | 18 per platoon |

**For the Observer/Controller:**

| | |
|---|---|
| Phase 1 | 90 |
| Phase 2 | 125 |
| Phase 3 | 124 |
| Total | 339 |

**Average Response Rates by Source:**

| | |
|---|---|
| CO/XO/1st SGT (Above) | 100% |
| Platoon Leader (Peers) | 96% |
| Platoon Sgt. (Peers) | 94% |
| Platoon Members (Below) | 86% |

AS OFJan 30, 1998

Table 2b

## Data Collection of 24 Platoons from a Single Brigade

### Garrison Data Collection (Dec 8-10, 1997*)

| | Infantry Battalion | | | | | | | | | Infantry Battaion | | | | | | | | | Avg/Tot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A Comapny | | | B Company | | | C Company | | | A Comapny | | | B Company | | | C Company | | | |
| | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | |
| **Plat Participation** | 8/12 | 8/12 | 8/12 | 8/12 | 8/12 | 8/12 | 8/12 | 8/12 | 8/12 | 9/12 | 9/12 | 9/12 | 9/12 | 9/12 | 9/12 | 9/12 | 9/12 | 9/12 | |
| Max Available / Plat | 23 | 23 | 23 | 28 | 25 | 20 | 26 | 28 | 30 | 24 | 24 | 19 | 26 | 24 | 18 | 23 | 30 | 23 | 24.28 |
| Tot Respondents / Plat | 20 | 20 | 18 | 20 | 22 | 19 | 26 | 22 | 24 | 24 | 20 | 14 | 23 | 20 | 14 | 24 | 25 | 19 | 20.78 |
| Plat Participation Rate | .87 | .87 | .78 | .71 | .88 | .95 | 1.00 | .79 | .80 | 1.00 | .83 | .74 | .88 | .83 | .78 | 1.04 | .83 | .83 | 86% |
| **Respondents by Class** | | | | | | | | | | | | | | | | | | | |
| CO/XO/1SGT | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100% |
| Peer | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 2 | 3 | 3 | 4 | 3 | 4 | 3 | 89% |
| Plat Ldr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | None | 1 | 1 | 0 | 1 | 1 | 1 | 94% |
| Plat Sgt | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 94% |
| Sqd & Tm Ldrs | 6 | 7 | 5 | 8 | 8 | 7 | 7 | 9 | 7 | 7 | 6 | 3 | 5 | 6 | 3 | 7 | 8 | 9 | 6.56 |
| EM | 12 | 11 | 11 | 10 | 12 | 10 | 17 | 11 | 15 | 15 | 12 | 10 | 16 | 12 | 10 | 15 | 16 | 8 | 12.39 |
| Total Rspndnts | 27 | 27 | 25 | 27 | 29 | 26 | 33 | 29 | 31 | 30 | 26 | 19 | 29 | 26 | 21 | 30 | 32 | 25 | 492 |
| Tot Instrmnts Cmplt'd** | 50 | 50 | 46 | 50 | 54 | 48 | 62 | 54 | 58 | 57 | 49 | 33 | 55 | 49 | 38 | 57 | 60 | 47 | 917 |

*30 Respondents from 2-87 completed instruments on 10/12/97. **Additional mail-in surveys were complete and returned by mail on 16 Dec 97 from four rifle platoons. There were 47 respondents by mail: 17 from1/A/2-87; 11 from1/C/2-87; 9 from 2/C/2-87; and 10 from 3/C/2-87. There is no platoon leader in 3/A/2-87; the position is not filled.

### JRTC O/C Collection 21-23 Jan1998

| | Infantry Battalion | | | | | | | | | Infantry Battaion | | | | | | | | | Avg/Tot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A Comapny | | | B Company | | | C Company | | | A Comapny | | | B Company | | | C Company | | | |
| **Company Cadre** | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | 1 Plat | 2 Plat | 3 Plat | |
| CO | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100% |
| XO | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 120% |
| 1SGT | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100% |
| **Cadre Cards Returned** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **3** | **54** |
| Cadre Rspnse Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 100% |
| **Observer / Controllers** | | | | | | | | | | | | | | | | | | | |
| Phase 1 O/C Reports | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 36 |
| Phase 2 O/C Reports | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 36 |
| Phase 3 O/C Reports | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 36 |
| **O/C Cards Returned** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **6** | **108** |
| O/C Response Rate | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 100% |





Prepared by W. M. Snodgrass

TEL 401-683-5260 FAX 401-683-1752

Table 3a

## LISREL ESTIMATES (FACTOR LOADINGS) FOR THE 6 FACTOR MODEL FOR THE MLQ

| | FACTOR | | | | | |
|---|---|---|---|---|---|---|
| ITEM | IL (IIAB+IM) | IS | IC | CR | MA | P (MP+LF) |
| Q10 | .831 | .000 | .000 | .000 | .000 | .000 |
| Q21 | .855 | .000 | .000 | .000 | .000 | .000 |
| Q6 | .421 | .000 | .000 | .000 | .000 | .000 |
| Q14 | .761 | .000 | .000 | .000 | .000 | .000 |
| Q23 | .679 | .000 | .000 | .000 | .000 | .000 |
| Q34 | .712 | .000 | .000 | .000 | .000 | .000 |
| Q1 | .000 | .685 | .000 | .000 | .000 | .000 |
| Q32 | .000 | .747 | .000 | .000 | .000 | .000 |
| Q36 | .000 | .713 | .000 | .000 | .000 | .000 |
| Q15 | .000 | .000 | .743 | .000 | .000 | .000 |
| Q19 | .000 | .000 | .636 | .000 | .000 | .000 |
| Q29 | .000 | .000 | .672 | .000 | .000 | .000 |
| Q31 | .000 | .000 | .863 | .000 | .000 | .000 |
| Q8 | .000 | .000 | .000 | .684 | .000 | .000 |
| Q11 | .000 | .000 | .000 | .611 | .000 | .000 |
| Q16 | .000 | .000 | .000 | .767 | .000 | .000 |
| Q24 | .000 | .000 | .000 | .000 | .584 | .000 |
| Q27 | .000 | .000 | .000 | .000 | .760 | .000 |
| Q3 | .000 | .000 | .000 | .000 | .000 | .727 |
| Q12 | .000 | .000 | .000 | .000 | .000 | .821 |
| Q20 | .000 | .000 | .000 | .000 | .000 | .505 |
| Q28 | .000 | .000 | .000 | .000 | .000 | .649 |
| Q33 | .000 | .000 | .000 | .000 | .000 | .642 |

Table 3b

## LISREL ESTIMATES (FACTOR LOADINGS) FOR THE 6 FACTOR MODEL FOR THE TMLQ

| | FACTOR | | | | | |
|---|---|---|---|---|---|---|
| ITEM | IL (IIAB+IM) | IS | IC | CR | MA | P (MP+LF) |
| Q2 | .682 | .000 | .000 | .000 | .000 | .000 |
| Q22 | .661 | .000 | .000 | .000 | .000 | .000 |
| Q34 | .673 | .000 | .000 | .000 | .000 | .000 |
| Q44 | .789 | .000 | .000 | .000 | .000 | .000 |
| Q16 | .699 | .000 | .000 | .000 | .000 | .000 |
| Q36 | .711 | .000 | .000 | .000 | .000 | .000 |
| Q8 | .000 | .689 | .000 | .000 | .000 | .000 |
| Q18 | .000 | .745 | .000 | .000 | .000 | .000 |
| Q28 | .000 | .772 | .000 | .000 | .000 | .000 |
| Q38 | .000 | .801 | .000 | .000 | .000 | .000 |
| Q10 | .000 | .000 | .723 | .000 | .000 | .000 |
| Q20 | .000 | .000 | .792 | .000 | .000 | .000 |
| Q48 | .000 | .000 | .831 | .000 | .000 | .000 |
| Q7 | .000 | .000 | .000 | .729 | .000 | .000 |
| Q25 | .000 | .000 | .000 | .783 | .000 | .000 |
| Q45 | .000 | .000 | .000 | .729 | .000 | .000 |
| Q13 | .000 | .000 | .000 | .000 | .411 | .000 |
| Q23 | .000 | .000 | .000 | .000 | .639 | .000 |
| Q3 | .000 | .000 | .000 | .000 | .000 | .616 |
| Q11 | .000 | .000 | .000 | .000 | .000 | .737 |
| Q31 | .000 | .000 | .000 | .000 | .000 | .754 |
| Q9 | .000 | .000 | .000 | .000 | .000 | .722 |
| Q19 | .000 | .000 | .000 | .000 | .000 | .536 |
| Q29 | .000 | .000 | .000 | .000 | .000 | .621 |
| Q39 | .000 | .000 | .000 | .000 | .000 | .510 |

**Table 4:**

**Lisrel Results Testing the Fit of 7 Models of the MLQ Based on Data Sets 2,3 and 4 From 54 Platoon Leaders and 54 Platoon Sergeants (N=1,526)**

| Model Description | $\chi 2$ | df | $\chi 2$/df | GFI | RMSR | NFI2 | NCNFI | $\Delta\chi 2$(df) |
|---|---|---|---|---|---|---|---|---|
| Null Model | 16194.01 | 253 | 64.07 | - | - | - | - | 14952 (38) |
| One factor model | 2555.98 | 230 | 11.12 | .841 | .060 | .975 | .854 | 1314 (15) |
| Two factor model | 1590.74 | 229 | 6.95 | .904 | .042 | .915 | .915 | 348 (14) |
| Three factor model | 1432.46 | 227 | 6.31 | .914 | .038 | .925 | .924 | 190 (12) |
| Four factor model | 1310.26 | 224 | 5.85 | .920 | .037 | .932 | .932 | 68 (9) |
| Six factor model | 1242.38 | 215 | 5.78 | .923 | .037 | .936 | .936 | |

$\Delta\chi 2$ is calculated by the subtracting the $\chi 2$ value associated with the six-factor target model with the value associated with each of the remaining nested models. The difference in the degrees of freedom (the degrees of freedom gained by setting more constraints) are reported in parentheses along side.

Two-factor model: One factor includes the transformational items and CR while the other factor includes MBE, and PA items.

Three-factor model: The first factor includes the transformational items and CR, the second factor includes MBE, and the third factor PA.
Four-factor model: The first factor is IL, the second IS/IC/CR, the third MBE, and the fourth PA.
The six-factor model includes IL, IS, IC, CR, MBE and PA.

NFI2 – Incremental Fit Index proposed by Mulaik, James, Van Alstine, Bennett, Lind & Stillwell (1989) is conceptually similar to the Normed Fit Index proposed by Bentler & Bonnett (1980), except that the degrees of freedom of the target model is subtracted from the Null model chi-sq in the denominator.

NCNFI (Non centralized Normed Fit Index) also referred to as the Relative Non-centrality Index (RNI) was proposed by McDonald and Marsh (1990) and is strongly recommended by Bagozzi, Yi and Phillips (1991) and Medsker, Williams and Holahan (1994). Values above .9 are indicative of a good fit.

**Table 5:**
**Lisrel results Testing the Fit of 7 Models of the TMLQ Based on Data Sets 2,3 and 4 From Platoons (N of raters =921)**

| Model Description | $\chi 2$ | df | $\chi 2$/df | GFI | RMSR | NFI2 | NCNFI | $\Delta\chi 2$(df) |
|---|---|---|---|---|---|---|---|---|
| Null Model | 9585.15 | 300 | 31.95 | | | | | 8933(35) |
| One factor model | 1353.67 | 275 | 4.92 | .859 | .054 | 0.810 | 0.884 | 691(10) |
| Two factor model | 835.02 | 274 | 3.04 | .928 | .052 | 0.858 | 0.940 | 173(9) |
| Three factor model | 695.37 | 272 | 2.56 | .941 | .037 | 0.865 | 0.954 | 33(7) |
| Four factor model | 683.86 | 269 | 2.54 | .942 | .037 | 0.857 | 0.955 | 21(4) |
| Five factor model | 662.40 | 265 | 2.49 | .944 | .036 | 0.846 | 0.957 | |

$\Delta\chi 2$ is calculated by the subtracting the $\chi 2$ value associated with the five-factor target model with the value associated with each of the remaining nested models. The difference in the degrees of freedom (the degrees of freedom gained by setting more constraints) are reported in parentheses along side.

Two-factor model: One factor includes the transformational items and CR while the other factor includes MBE, and PA items.

Three-factor model: The first factor includes the transformational items and CR, the second factor includes MBE, and the third factor PA.
Four-factor model: The first factor is IL, the second IS/IC/CR, the third MBE, and the fourth PA. The five-factor model includes IL, IS, IC+CR, MBE and PA.

NFI2 - Incremental Fit Index proposed by Mulaik, James, Van Alstine, Bennett, Lind & Stillwell (1989) is conceptually similar to the Normed Fit Index proposed by Bentler & Bonnett (1980), except that the degrees of freedom of the target model is subtracted from the Null model chi-sq in the denominator.

NCNFI (Non centralized Normed Fit Index) also referred to as the Relative Non-centrality Index (RNI) was proposed by McDonald and Marsh (1990) and is strongly recommended by Bagozzi, Yi and Phillips (1991) and Medsker, Williams and Holahan (1994). Values above .9 are indicative of a good fit.

**Table 6:**
**Descriptive statistics, MLQ reliabilities and intercorrelations among leadership scales:**
**Platoon Leader (6 factor)**

| | | | | Overall | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 2.71 | .87 | .85 | | | | | |
| 2. IS | 2.58 | .84 | .72 | 0.73 ** | | | | |
| 3. IC | 2.50 | .91 | .77 | 0.77 ** | .73 ** | | | |
| 4. CR | 2.34 | .93 | .71 | 0.70 ** | .65 ** | .68 ** | | |
| 5. MA | 1.93 | 1.01 | .57 | -0.04 | -.04 | -.09 ** | -.09 ** | |
| 6. PA | 0.80 | .77 | .79 | -0.55 ** | -.47 ** | -.47 ** | -.41 ** | .18 ** |

| | | | | Below | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 2.56 | 2.56 | .84 | | | | | |
| 2. IS | 2.47 | 2.47 | .71 | .73 ** | | | | |
| 3. IC | 2.32 | 2.32 | .75 | .76 ** | .74 ** | | | |
| 4. CR | 2.17 | 2.17 | .69 | .70 ** | .65 ** | .65 ** | | |
| 5. MA | 2.03 | 2.03 | .56 | -.03 | -.03 | -.07 | -.06 | |
| 6. PA | 0.87 | 0.87 | .77 | -.54 ** | -.47 ** | -.46 ** | -.40 ** | .16 ** |

| | | | | Peer | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 3.05 | .59 | .77 | | | | | |
| 2. IS | 2.78 | .64 | .58 | .54 ** | | | | |
| 3. IC | 2.87 | .60 | .65 | .59 ** | .55 ** | | | |
| 4. CR | 2.60 | .59 | .60 | .56 ** | .58 ** | .57 ** | | |
| 5. MA | 1.88 | .94 | .60 | .09 | -.02 | .03 | .04 | |
| 6. PA | 0.63 | .67 | .81 | -.39 ** | -.41 ** | -.35 ** | -.33 ** | .09 |

| | | | | Above | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 3.09 | .73 | .89 | | | | | |
| 2. IS | 2.85 | .72 | .72 | .72 ** | | | | |
| 3. IC | 2.96 | .70 | .81 | .80 ** | .73 ** | | | |
| 4. CR | 2.87 | .65 | .68 | .65 ** | .61 ** | .67 ** | | |
| 5. MA | 1.53 | .93 | .46 | .14 | .13 | .16 * | .12 | |
| 6. PA | 0.66 | .70 | .84 | -.56 ** | -.45 ** | -.47 ** | -.41 ** | .17 * |

| | | | | Self | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 3.21 | .55 | .77 | | | | | |
| 2. IS | 3.07 | .54 | .52 | .41 ** | | | | |
| 3. IC | 3.13 | .58 | .66 | .55 ** | .51 ** | | | |
| 4. CR | 3.00 | .59 | .58 | .53 ** | .33 ** | .58 ** | | |
| 5. MA | 1.80 | 1.06 | .56 | .26 * | .12 | .21 | .13 | |
| 6. PA | .56 | .48 | .63 | -.19 | -.20 | -.30 * | -.40 ** | .04 |

Note: The numbers for means and standard deviations are: Overall (N=1023), Below (N=698), Peer (N=103), Above (n=185) and Self (n=69).

**Legend:**

**IL: Inspirational Leadership**
**IS: Intellectual Stimulation**
**IS: Individualized Consideration**
**CR: Contingent Reward**
**MA: Management-by-exception (Active)**
**PA: Passive Leadership**

**Table 7 :**

**Descriptive statistics, MLQ reliabilities and intercorrelations among leadership scales: Platoon Sergeant (6 factor)**

| Overall | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 2.72 | .88 | .86 | | | | | |
| 2. IS | 2.48 | .87 | .75 | .76 ** | | | | |
| 3. IC | 2.48 | .96 | .82 | .79 ** | .77 ** | | | |
| 4. CR | 2.45 | .91 | .71 | .73 ** | .68 ** | .74 ** | | |
| 5. MA | 2.08 | .99 | .52 | -.07 * | -.06 | -.15 ** | -.09 ** | |
| 6. PA | 0.84 | .82 | .81 | -.61 ** | -.52 ** | -.54 ** | -.51 ** | .16 ** |

| Below | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 2.54 | .90 | .84 | | | | | |
| 2. IS | 2.31 | .90 | .76 | .74 ** | | | | |
| 3. IC | 2.25 | .99 | .80 | .76 ** | .75 ** | | | |
| 4. CR | 2.22 | .92 | .67 | .69 ** | .64 ** | .70 ** | | |
| 5. MA | 2.23 | .95 | .44 | -.04 | -.02 | -.11 ** | -.04 | |
| 6. PA | 0.97 | .84 | .79 | -.59 ** | -.50 ** | -.51 ** | -.50 ** | .13 ** |

| Peer | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 3.10 | .66 | .85 | | | | | |
| 2. IS | 2.81 | .65 | .62 | .64 ** | | | | |
| 3. IC | 2.96 | .66 | .77 | .75 ** | .78 ** | | | |
| 4. CR | 2.87 | .69 | .72 | .71 ** | .63 ** | .72 ** | | |
| 5. MA | 1.95 | .96 | .64 | .10 | .04 | .07 | .10 | |
| 6. PA | 0.54 | .58 | .64 | -.42 ** | -.29 ** | -.35 ** | -.19 * | .20 * |

| Above | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 3.09 | .73 | .89 | | | | | |
| 2. IS | 2.85 | .72 | .71 | .77 ** | | | | |
| 3. IC | 2.99 | .67 | .78 | .80 ** | .68 ** | | | |
| 4. CR | 2.96 | .68 | .75 | .75 ** | .65 ** | .71 ** | | |
| 5. MA | 1.61 | .98 | .52 | .08 | .11 | -.04 | .05 | |
| 6. PA | 0.59 | .75 | .90 | -.62 ** | -.53 ** | -.55 ** | -.44 ** | .08 |

| Self | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. IL | 3.33 | .48 | .72 | | | | | |
| 2. IS | 3.03 | .57 | .64 | .51 ** | | | | |
| 3. IC | 3.26 | .56 | .64 | .57 ** | .53 ** | | | |
| 4. CR | 3.17 | .53 | .32 | .29 * | .22 | .38 ** | | |
| 5. MA | 2.02 | 1.00 | .52 | -.03 | -.13 | -.06 | .01 | |
| 6. PA | 0.42 | .49 | .63 | -.24 | -.17 | -.12 | .12 | .02 |

Note: The numbers for means and standard deviations are: Overall (N=1011), Below (N=666), Peer (N=129) and Above (n=192) and Self (n=69).

**Legend:**

**IL: Inspirational Leadership**
**IS: Intellectual Stimulation**
**IS: Individualized Consideration**
**CR: Contingent Reward**
**MA: Management-by-exception (Active)**
**PA: Passive Leadership**

## Table 8 :

**Descriptive statistics, TMLQ reliabilities and intercorrelations among leadership scales:**

## Platoon (5 factor)

| | | | | Overall | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. TIL | 2.32 | .84 | .84 | | | | | |
| 2. TIS | 2.17 | .85 | .77 | .76 | | | | |
| 3. TDE | 2.40 | .86 | .86 | .82 | .76 | | | |
| 4. TMA | 2.34 | .79 | .33 | .39 | .39 | .43 | | |
| 5. TPA | 1.34 | .79 | .82 | -.62 | -.55 | -.65 | -.23 | |

| | | | | Below | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. TIL | 2.30 | .84 | .83 | | | | | |
| 2. TIS | 2.16 | .85 | .77 | .75 | | | | |
| 3. TDE | 2.38 | .86 | .86 | .82 | .76 | | | |
| 4. TMA | 2.35 | .78 | .33 | .39 | .39 | .43 | | |
| 5. TPA | 1.36 | .79 | .82 | -.62 | -.54 | -.65 | -.24 | |

| | | | | Peer | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. TIL | 2.83 | .60 | .80 | | | | | |
| 2. TIS | 2.57 | .59 | .67 | .68 | | | | |
| 3. TDE | 2.84 | .63 | .85 | .72 | .69 | | | |
| 4. TMA | 2.25 | .78 | .19 | .24 | .26 | .26 | | |
| 5. TPA | 0.96 | .68 | .85 | -.62 | -.60 | -.67 | -.02 | |

Note: The numbers for means and standard deviations are: overall (N=1220), below (N=1116), Peer (N=65).

## Table 9 :

**Descriptive statistics, TMLQ reliabilities and intercorrelations among leadership scales:**

## Company (5 factor)

| | | | | Overall | | | | |
|---|---|---|---|---|---|---|---|---|
| | M | SD | Alpha | 1 | 2 | 3 | 4 | 5 |
| 1. TIL | 2.37 | 0.81 | .84 | | | | | |
| 2. TIS | 2.15 | 0.85 | .78 | .74 | | | | |
| 3. TDE | 2.44 | 0.81 | .84 | .84 | .79 | | | |
| 4. TMA | 2.42 | 0.75 | -.05 | .36 | .32 | .34 | | |
| 5. TPA | 1.27 | 0.84 | .86 | -.65 | -.56 | -.67 | -.20 | |

Note: The numbers for means and standard deviations are: overall (N=390).

**TIL: Inspirational Leadership**
**TIS: Intellectual Stimulation**
**TDE: Developmental Exchange**
**TMA: Management-by-exception (Active)**
**TPA: Passive Leadership**

**Table 10:**
## Self vs. Other MLQ Correlations

| MLQ | | | | | | |
|---|---|---|---|---|---|---|
| **Ratee:** | ***LEADER*** | ***SERGEANT*** | ***LEADER*** | ***SERGEANT*** | ***LEADER*** | ***SERGEANT*** |
| **Source:** | ***Below*** | | ***Peers*** | | ***Above*** | |
| **IL** | .19 | .13 | .14 | .13 | .20 | .21 |
| **IS** | .06 | -.00 | .09 | .20 | .27* | .00 |
| **IC** | .03 | .22 | .09 | -.02 | .26* | -.04 |
| **CR** | .05 | .11 | .31* | -.08 | .24 | -.21 |
| **MA** | .32** | .16 | .04 | .29* | .08 | .01 |
| **PA** | -.26* | .11 | .21 | .07 | .11 | -.04 |

**Table 11A:**
**T-Test Results Comparing Self and Other Ratings of Platoon Leaders [1]**

| MLQ Factor | Below | Peer | Above |
|---|---|---|---|
| **IL** | -7.95** | -1.69 | -1.49 |
| **IS** | -7.15** | -3.36** | -2.91** |
| **IC** | -8.99** | -2.84** | -2.18* |
| **CR** | -9.15** | -4.92** | -1.90 |
| **MA** | 1.66 | .05 | -2.14* |
| **PA** | 3.65** | .91 | 1.32 |

**Note 1: means for each rater source were provided in Table 6.**
* p<.05
** p<.01

**Table 11B:**
**T-Test Results Comparing Self and Other Ratings of Platoon Sergeants [1]**

| MLQ Factor | Below | Peer | Above |
|---|---|---|---|
| **IL** | -10.37** | -2.79** | -3.19** |
| **IS** | -8.21** | -2.92** | -6.51** |
| **IC** | -12.82** | -3.37** | -3.04** |
| **CR** | -11.81** | -2.86** | -2.15* |
| **MA** | 1.81 | -.36 | -2.94** |
| **PA** | 7.37** | 1.77 | 1.87 |

Note 1: Means for each rater source were provided in Table 7.
* p<.05
** p<.01

**Table 12:**
**MLQ Correlations of 72 Platoon Leaders and Sergeants between sources from Above, Peer and Below**

| MLQ Factor Scores | | Platoon Leader | | Platoon Sergeant | |
|---|---|---|---|---|---|
| | | Peer | Above | Peer | Above |
| | Below | .27* | .21 | .21 | .46 |
| IL | Peer | | -.41** | | .21 |
| | Below | .08 | .09 | .02 | .42 |
| IS | Peer | | -.33** | | .27 |
| | Below | .06 | .25* | .18 | .34 |
| IC | Peer | | -.29** | | .20 |
| | Below | .15 | .22 | .18 | .25 |
| CR | Peer | | -.39** | | .30 |
| | Below | .46** | .33** | .14 | .01 |
| MA | Peer | | -.06 | | .17 |
| | Above | | | | |
| | | .10 | .07 | .05 | .46 |
| PA | Peer | | .52** | | .14 |

* p<.05
** p<.01

**Table 13:**
**Correlations for 62 platoons of the TMLQ factor scores between peers and below**

| TMLQ factor scores | Peer/Below |
|---|---|
| IL | .47** |
| IS | .37** |
| IC | .46** |
| MA | .05 |
| PA | .37** |

** p<.01

**Table 14:**
**Comparison of Means of the PL and PSG by Source of Ratings**

| | PL | | | PSG | | |
|---|---|---|---|---|---|---|
| MLQ Factor scores | Below | Peer | Above | Below | Peer | Above |
| IL | 2.56 | 3.05 | 3.09 | 2.54 | 3.10 | 3.09 |
| IS | 2.47 | 2.78 | 2.85 | 2.31 | 2.81 | 2.85 |
| IC | 2.32 | 2.87 | 2.96 | 2.25 | 2.96 | 2.99 |
| CR | 2.17 | 2.60 | 2.87 | 2.22 | 2.87 | 2.96 |
| MA | 2.03 | 1.88 | 1.53 | 2.23 | 1.95 | 1.61 |
| PA | .87 | .63 | .66 | .97 | .54 | .59 |

## Table 15:
**Performance by Phase**

| | Phase 1 | | | | Phase 2 | | | | Phase 3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Criterion | M | SD | Alpha | Agreement | M | SD | Alpha | Agreement | M | SD | Alpha |
| **PLE** | 2.83 | .63 | .92 | .46 | 2.79 | .68 | .94 | .73 | 2.91 | .64 | .95 |
| **PSGE** | 2.78 | .73 | .93 | .50 | 2.72 | .75 | .96 | .56 | 2.88 | .68 | .96 |
| **A** | 1.89 | | | .72 | 2.08 | | | .63 | 2.28 | | |
| **B** | 2.86 | | | .67 | 3.09 | | | .75 | 3.22 | | |

**Legend**

**A:** Taking into account the weather, terrain, support & opposition, how well did this platoon accomplish its tactical mission?

**B:** Overall assessment - compared to similar platoons, this platoon performed overall in the bottom 1/5, next lower, middle 1/5, next higher or top 1/5.

**PLE:** How frequently the Platoon Leader contributed to the platoon's effectiveness according to 14 criteria.

**PSGE:** How frequently the Platoon Sergeant contributed to the platoon's effectiveness according to 14 criteria.

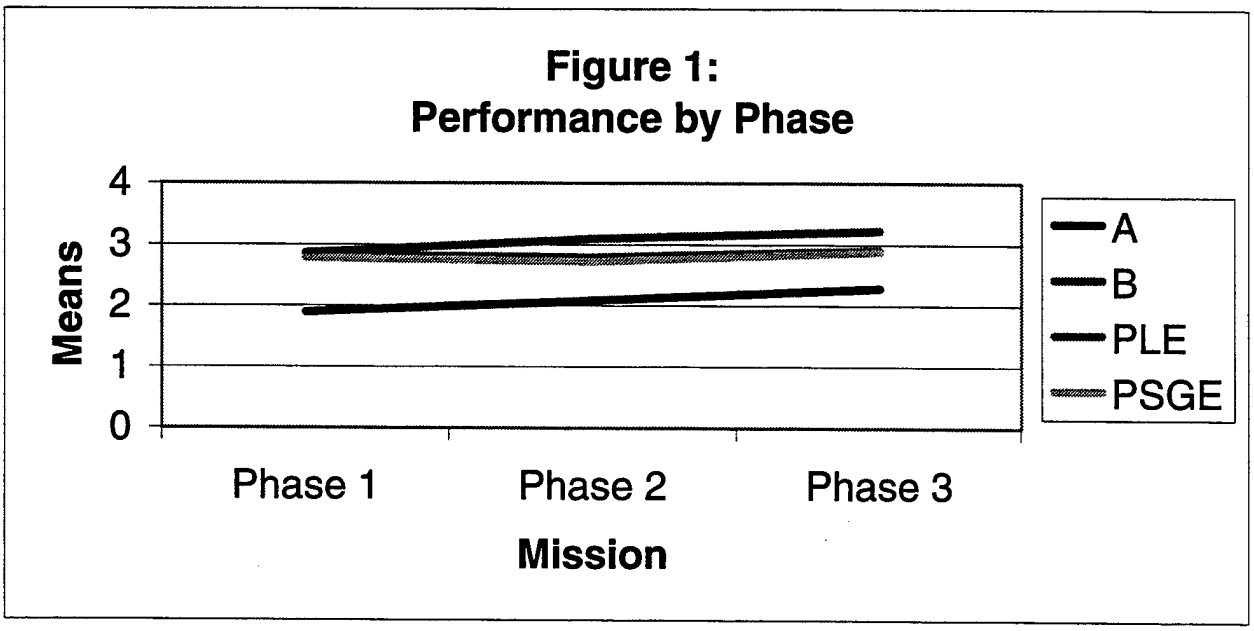


**Table 16:**
## Intercorrelations between O/C performance indices

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **1. A** | | | | |
| **2. B** | .68 (.75)[1] | | | |
| **3. PLE** | .31 | .42 (.53) | | |
| **4. PSGE** | .24 | .35 | .61 (.71) | |
| **5. Quality Of PL/PSG Rel.** | .48 | .59 | .58 | .64 (.79) |

Note 1: The values in parentheses represent interrater agreement between O/C raters at JRTC.

**Legend**

**A:** Taking into account the weather, terrain, support & opposition, how well did this platoon accomplish its tactical mission?

**B:** Overall assessment - compared to similar platoons, this platoon performed overall in the bottom 1/5, next lower, middle 1/5, next higher or top 1/5.

**PLE:** How frequently the Platoon Leader contributed to the platoon's effectiveness according to 14 criteria.

**PSGE:** How frequently the Platoon Sergeant contributed to the platoon's effectiveness according to 14 criteria.

**Table 17:**
**Correlation Between Platoon Leader and Team Climate Based on Different Sources**

| MLQ Factor | Source | TEE | TCL | TEFF | TSAT |
|---|---|---|---|---|---|
| IL | Below | .23 | .54 ** | .44 ** | .37 ** |
| | Peer | .13 | .08 | .15 | .13 |
| | Above | .01 | .12 | .14 | .12 |
| IS | Below | .18 | .52 ** | .49 ** | .43 ** |
| | Peer | .11 | .14 | .05 | .06 |
| | Above | -.03 | .00 | .07 | .07 |
| IC | Below | .15 | .46 ** | .43 ** | .38 ** |
| | Peer | .07 | .09 | -.09 | .05 |
| | Above | -.00 | .07 | .13 | .08 |
| CR | Below | .26 | .58 ** | .44 ** | .50 ** |
| | Peer | .13 | -.01 | -.05 | .08 |
| | Above | -.10 | .03 | -.03 | .04 |
| MA | Below | .08 | -.05 | -.08 | .02 |
| | Peer | .28 | -.02 | .01 | -.01 |
| | Above | .03 | -.12 | -.09 | -.15 |
| PL | Below | -.21 | -.50 ** | -.45 ** | -.38 ** |
| | Peer | .03 | -.31 * | -.12 | -.24 |
| | Above | -.10 | -.21 | -.21 | -.20 |

* p<.05 ** p<.01

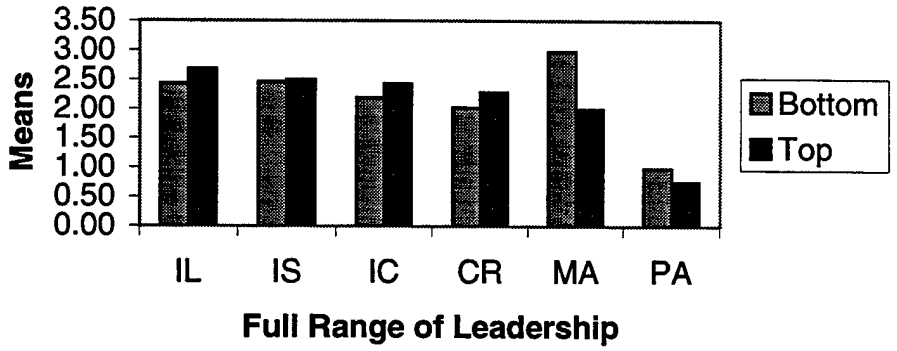
**Table 18:**
**Correlation Between Platoon Sergeant and Team Climate Based on Different Sources**

| MLQ Factor | Source | TEE | TCL | TEFF | TSAT |
|---|---|---|---|---|---|
| IL | Below | .24 | .62 ** | .54 ** | .50 |
| | Peer | .05 | .14 | .17 | .26 |
| | Above | .13 | .22 | .15 | .17 |
| IS | Below | .14 | .60 ** | .50 * | .49 |
| | Peer | -.08 | .03 | .15 | .12 |
| | Above | .13 | .15 | .15 | .12 |
| IC | Below | .21 | .59 ** | .46 ** | .49 |
| | Peer | -.03 | .11 | .18 | .21 |
| | Above | .12 | .13 | .09 | .03 |
| CR | Below | .26 | .53 ** | .43 ** | .40 ** |
| | Peer | -.03 | .12 | .16 | .24 |
| | Above | -.07 | .09 | .04 | .03 |
| MA | Below | -.30* | -.41 ** | -.39 ** | -.35 ** |
| | Peer | .14 | .13 | .18 | .09 |
| | Above | .13 | .02 | .17 | .04 |
| PA | Below | -.15 | -.47 ** | -.46 ** | -.36 ** |
| | Peer | .08 | .08 | .01 | .02 |
| | Above | -.19 | -.18 | -.13 | -.16 |

* p<.05 ** p<.01

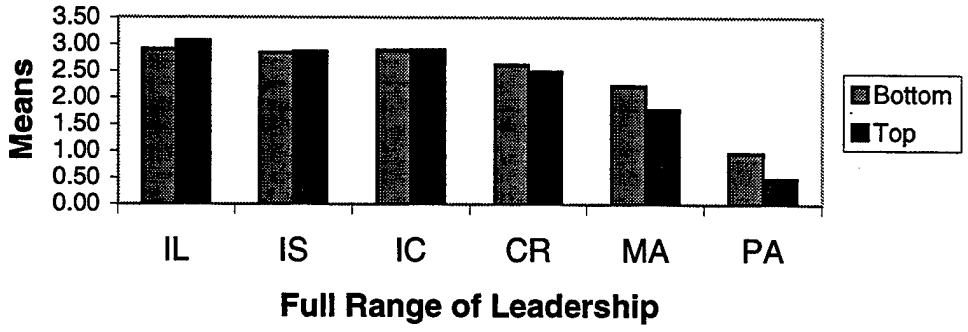
Legend:
**TEE: Team Extra Effort**
**TCL: Team Cohesion**
**TEFF: Team Effectiveness**
**TSAT: Team Satisfaction**

**Table 19:**
**Platoon Leader MLQ Ratings from Below for Top/Bottom Platoon JRTC Effectiveness**



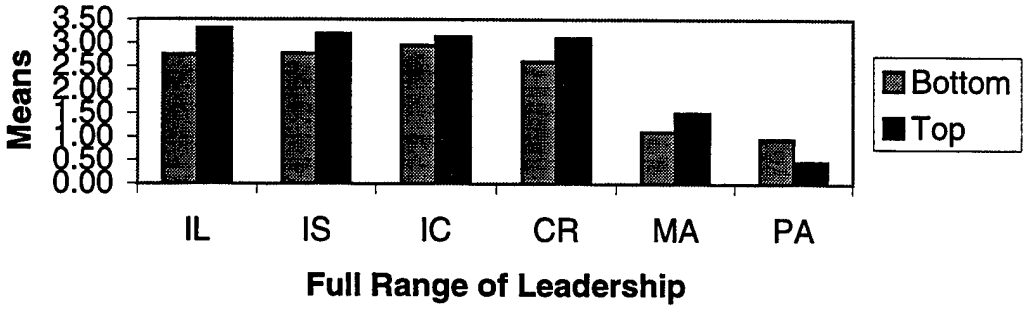

| MLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 2.43 | 2.68 |
| Intellectual Stimulation | IS | 2.46 | 2.50 |
| Individualized Consideration | IC | 2.19 | 2.43 |
| Contingent Reward | CR | 2.02 | 2.28 |
| Management-by-Exception (Active) | MA | 2.97 | 1.99 |
| Passive Leadership | PA | 0.98 | 0.75 |

## Table 20:
## Platoon Leader MLQ Ratings from Peers for Top/Bottom Platoon JRTC Effectiveness




| MLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 2.91 | 3.07 |
| Intellectual Stimulation | IS | 2.84 | 2.87 |
| Individualized Consideration | IC | 2.89 | 2.90 |
| Contingent Reward | CR | 2.62 | 2.49 |
| Management-by-Exception (Active) | MA | 2.22 | 1.78 |
| Passive Leadership | PA | 0.96 | 0.48 |

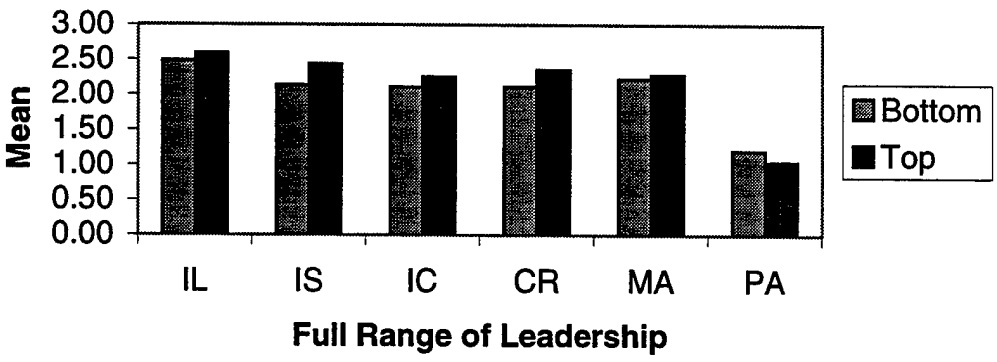
**Table 21:**
**Platoon Leader MLQ Ratings from Above for Top/Bottom Platoon JRTC Effectiveness**




**Full Range of Leadership**

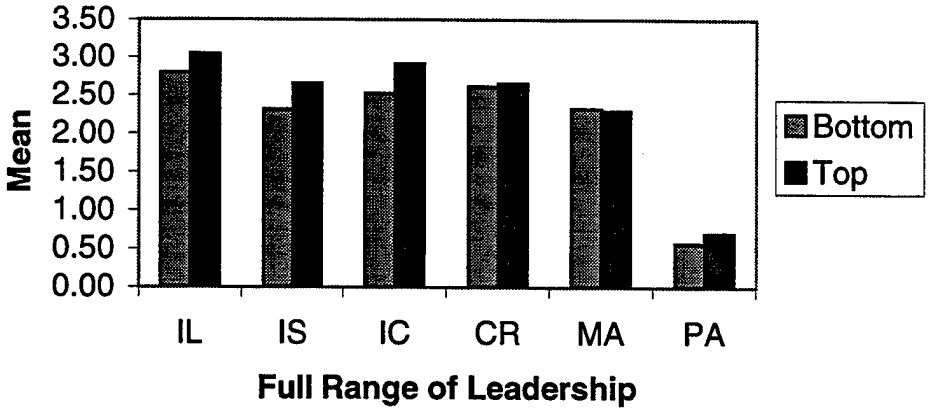
| MLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 2.74 | 3.31 |
| Intellectual Stimulation | IS | 2.76 | 3.19 |
| Individualized Consideration | IC | 2.94 | 3.13 |
| Contingent Reward | CR | 2.60 | 3.10 |
| Management-by-Exception (Active) | MA | 1.10 | 1.51 |
| Passive Leadership | PA | 0.95 | 0.47 |

**Table 22:**
**Platoon Sergeant MLQ Ratings from Below for Top/Bottom Platoon JRTC Effectiveness**



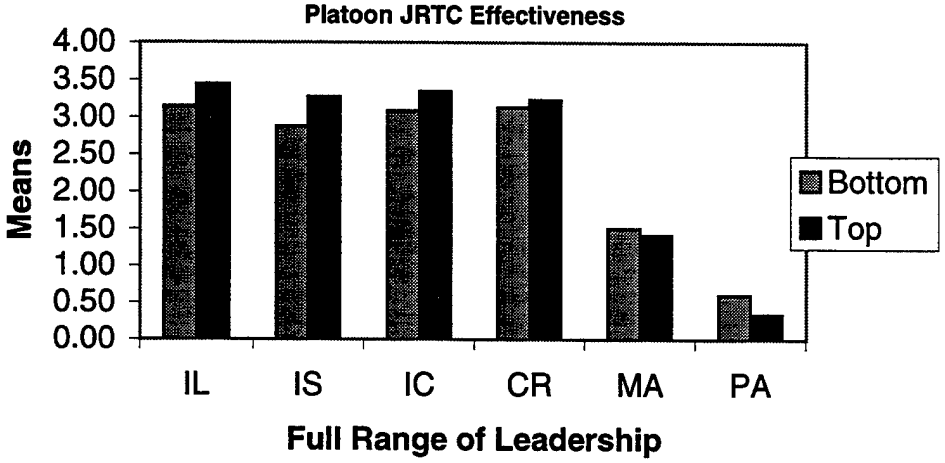

| MLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 2.48 | 2.59 |
| Intellectual Stimulation | IS | 2.13 | 2.43 |
| Individualized Consideration | IC | 2.10 | 2.25 |
| Contingent Reward | CR | 2.11 | 2.35 |
| Management-by-Exception (Active) | MA | 2.22 | 2.28 |
| Passive Leadership | PA | 1.20 | 1.04 |

**Table 23:**
**Platoon Sergeant MLQ Ratings from Peers for Top Bottom Platoon JRTC Effectiveness**




| MLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 2.79 | 3.04 |
| Intellectual Stimulation | IS | 2.31 | 2.65 |
| Individualized Consideration | IC | 2.52 | 2.91 |
| Contingent Reward | CR | 2.61 | 2.65 |
| Management-by-Exception (Active) | MA | 2.32 | 2.29 |
| Passive Leadership | PA | 0.57 | 0.70 |

**Table 24:**
**Platoon Sergeant MLQ Ratings from Above for Top Bottom Platoon JRTC Effectiveness**




| MLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 3.14 | 3.44 |
| Intellectual Stimulation | IS | 2.87 | 3.27 |
| Individualized Consideration | IC | 3.08 | 3.34 |
| Contingent Reward | CR | 3.13 | 3.23 |
| Management-by-Exception (Active) | MA | 1.50 | 1.41 |
| Passive Leadership | PA | 0.60 | 0.34 |

## Table 25:
## Correlation Between Platoon Performance and Platoon Leader Ratings

| | | JRTC Criterion Measures | | | | | |
|---|---|---|---|---|---|---|---|
| MLQ Factor | Source | A | B | PLE | PSGE | PL/PSG Relationship | |
| IL | Below | .16 | .15 | .26 | -.05 | .24 | |
| | Peer | .06 | .10 | .20 | .09 | .25 | |
| | Above | .16 | .42** | .46** | .32* | .35 | |
| IS | Below | .15 | .12 | .18 | -.12 | .12 | |
| | Peer | -.05 | .14 | .00 | -.08 | .16 | |
| | Above | .23 | .38** | .32* | .22 | .19 | |
| IC | Below | .10 | .13 | .24 | -.04 | .21 | |
| | Peer | -.07 | .03 | .01 | .01 | .03 | |
| | Above | .08 | .29* | .26 | .22 | .12 | |
| CR | Below | .13 | .10 | .26 | .02 | .20 | |
| | Peer | -.13 | .04 | .01 | -.21 | .06 | |
| | Above | .06 | .28* | .33* | .34* | .30 | |
| MA | Below | -.03 | -.10 | .10 | .02 | -.04 | |
| | Peer | .08 | -.04 | -.17 | -.10 | -.17 | |
| | Above | .06 | .04 | .22 | .24 | .17 | |
| PA | Below | -.21 | -.10 | -.26 | -.07 | -.22 | |
| | Peer | .05 | -.15 | -.40** | -.30* | -.29* | |
| | Above | -.12 | -.35* | -.34* | -.33* | -.30 | |

**MLQ Legend:**
**IL: Inspirational Leadership**
**IS: Intellectual Stimulation**
**IS: Individualized Consideration**
**CR: Contingent Reward**
**MA: Management-by-exception (Active)**
**PA: Passive Leadership**

**JRTC Criterion Legend**

**A:** Taking into account the weather, terrain, support & opposition, how well did this platoon accomplish its tactical mission?

**B:** Overall assessment - compared to similar platoons, this platoon performed overall in the bottom 1/5, next lower, middle 1/5, next higher or top 1/5.

**PLE:** How frequently the Platoon Leader contributed to the platoon's effectiveness according to 14 criteria.

**PSG:** How frequently the Platoon Sergeant contributed to the platoon's effectiveness according to 14 criteria.

**PL/PSG Relationship:** How well did the Platoon Leader and Platoon Sergeant work together.

## Table 26:
## Correlation between Platoon Performance and Platoon Sergeant Ratings

| | | JRTC Criterion Measures | | | | | |
|---|---|---|---|---|---|---|---|
| MLQ Factor | Source | A | B | PLE | PSGE | PL/PSG | Relationship |
| IL | Below | .12 | .05 | .37 | .26 | | .02 |
| | Peer | .34* | .19 | .01 | .06 | | .28* |
| | Above | -.05 | -.00 | .02 | .33* | | .16 |
| IS | Below | .23 | .10 | .03 | .16 | | .08 |
| | Peer | .25 | .11 | .01 | .04 | | .22 |
| | Above | .07 | .06 | -.06 | .31* | | .12 |
| IC | Below | .20 | .03 | .17 | .19 | | .00 |
| | Peer | .29* | .25 | .05 | .06 | | .37** |
| | Above | .03 | .09 | -.00 | .26 | | .19 |
| CR | Below | .17 | . 05 | .03 | .11 | | .11 |
| | Peer | .18 | .09 | .10 | -.02 | | .28* |
| | Above | -.08 | -.05 | -.05 | .18 | | .10 |
| MA | Below | -.11 | -.08 | .08 | .19 | | -.01 |
| | Peer | .03 | -.05 | -.02 | .03 | | .03 |
| | Above | -.03 | -.03 | -.16 | .07 | | -.17 |
| PA | Below | -.11 | -.02 | -.04 | .22 | | -.13 |
| | Peer | -.09 | -.04 | .18 | -.01 | | .03 |
| | Above | -.00 | .04 | .05 | -.30* | | -.09 |

**MLQ Legend:**
**IL: Inspirational Leadership**
**IS: Intellectual Stimulation**
**IS: Individualized Consideration**
**CR: Contingent Reward**
**MA: Management-by-exception (Active)**
**PA: Passive Leadership**

**JRTC Criterion Legend**

**A:** Taking into account the weather, terrain, support & opposition, how well did this platoon accomplish its tactical mission?

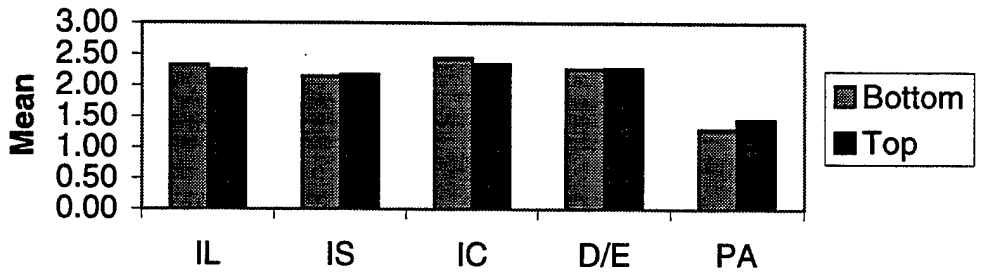
**B:** Overall assessment - compared to similar platoons, this platoon performed overall in the bottom 1/5, next lower, middle 1/5, next higher or top 1/5.

**PLE:** How frequently the Platoon Leader contributed to the platoon's effectiveness according to 14 criteria.

**PSGE:** How frequently the Platoon Sergeant contributed to the platoon's effectiveness according to 14 criteria.

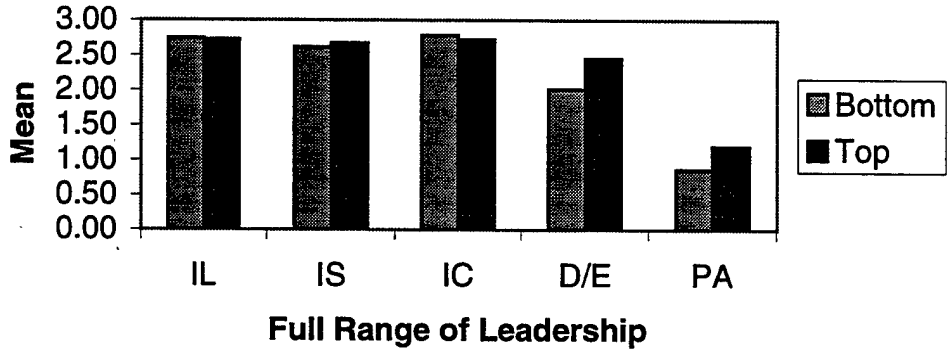
**PL/PSG Relationship:** How well did the Platoon Leader and Platoon Sergeant work together.

**Table 27:**
**Platoon TMLQ Ratings from Below for Top vs. Bottom JRTC Effectiveness**




| | | *Mean* | |
|---|---|---|---|
| TMLQ Factors | Scale | Bottom | Top |
| Inspirational Leadership | IL | 2.32 | 2.25 |
| Intellectual Stimulation | IS | 2.14 | 2.17 |
| Individualized Consideration | IC | 2.43 | 2.34 |
| Developmental/Exchange | D/E | 2.26 | 2.27 |
| Passive Leadership | PA | 1.29 | 1.45 |

**Table 28:**
**Platoon TMLQ Ratings from Peer for Top/Bottom Platoon JRTC Effectiveness**




| TMLQ Factors | Scale | *Mean* Bottom | Top |
|---|---|---|---|
| Inspirational Leadership | IL | 2.74 | 2.72 |
| Intellectual Stimulation | IS | 2.61 | 2.67 |
| Individualized Consideration | IC | 2.78 | 2.72 |
| Developmental/Exchange | D/E | 2.01 | 2.45 |
| Passive Leadership | PA | 0.86 | 1.19 |

**Table 29:**
**Qualitative Differences in the 9 Bottom and 9 Top Platoons in PL/PSG Relations According to O/C Observations**

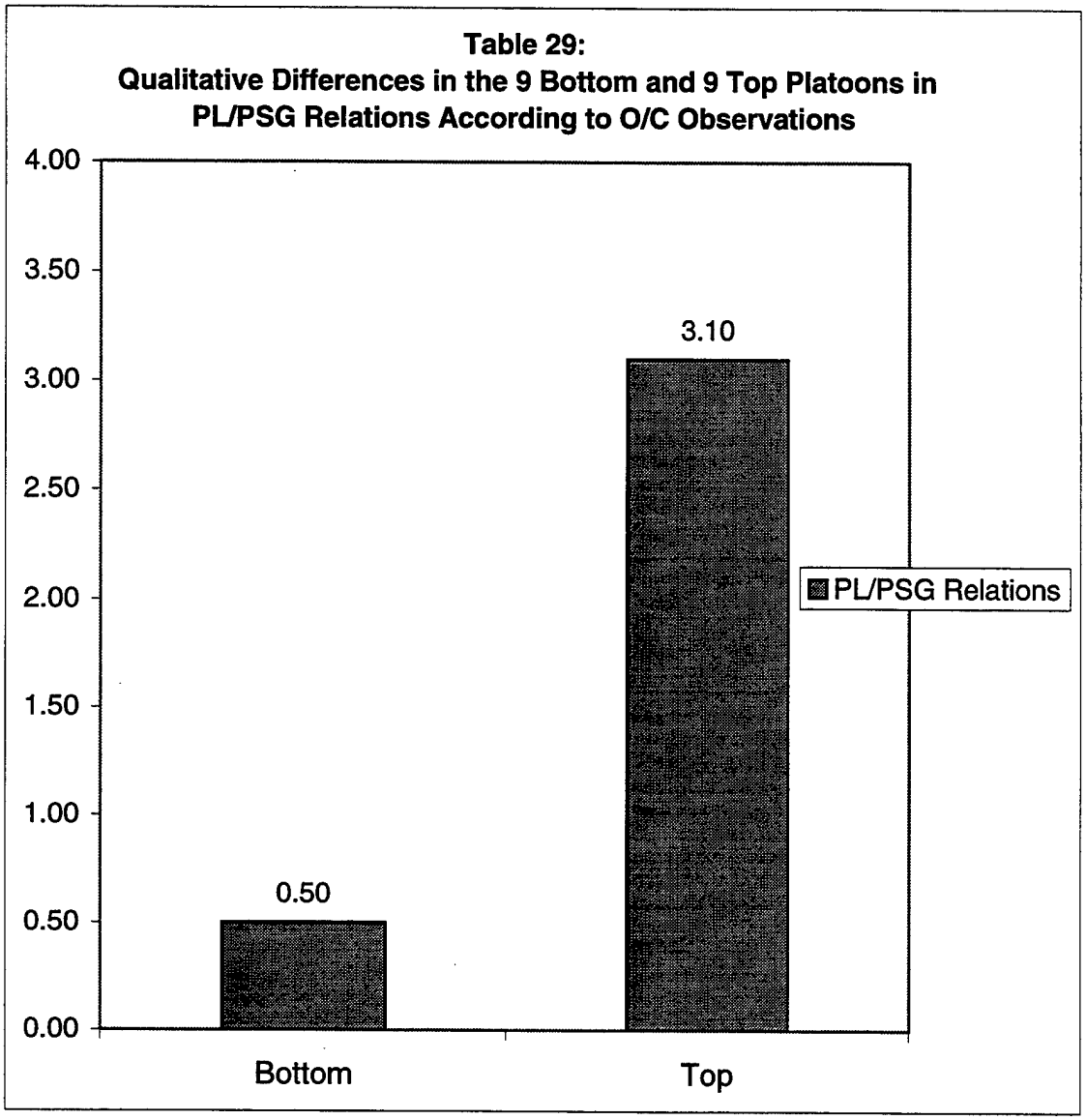


**Table 30:**
**Summary of Regression Results Predicting JRTC Performance from MLQ Garrison Ratings by Source**

| | Below | | Peer | | Above | |
|---|---|---|---|---|---|---|
| **Performance Index** | **$R^2$** | **Beta** | **$R^2$** | **Beta** | **$R^2$** | **Beta** |
| A | NS | | .12 * | PSG-TL (.46) | NS | |
| B | NS | | NS | | .17 ** | PL-TL (.67) |
| PLE | .12 NS | | .16 * | PL-PA (-.55) | .13 ** | PSG-TL (.51) |
| PSGE | .12 NS | | NS | | .24 ** | PL-MA (.33)<br>PL-PA (-.38) |
| PL/PSG Relationships | NS | | .20 ** | PL-PA (-.57)<br>PSG-TL (.57) | .14 ** | PL-CR (.61) |

* Significant at the p<.05 level ** Significant at the p<.01 level NS: Non Significant

**Legend**

**A:** Taking into account the weather, terrain, support & opposition, how well did this platoon accomplish its tactical mission?

**B:** Overall assessment - compared to similar platoons, this platoon performed overall in the bottom 1/5, next lower, middle 1/5, next higher or top 1/5.

**PLE:** How frequently the Platoon Leader contributed to the platoon's effectiveness according to 14 criteria.

**PSGE:** How frequently the Platoon Sergeant contributed to the platoon's effectiveness according to 14 criteria.

**PL-TL:** Platoon Leader Transformational Leadership
**PSG-TL:** Platoon Sergeant Transformational Leadership
**PL-MA:** Platoon Leader Management-by-Exception
**PL-PA:** Leader Passive Leadership
**PL-CR:** Platoon Leader Contingent Reward

# APPENDICES

**A: O/C Rating Card**

**B: MLQ and TMLQ Sample items**

Appendix A

ALL INFORMATION PROTECTED

SIDE 2

## PLATOON PERFORMANCE

Date : ___/_____/199__

___ PLAT
___ CO
___ BN

*Post-Rotation Assessment*

**PLATOON SERGEANT**

Use the following scale to indicate how frequently the **PLATOON SERGEANT** contributed to the platoon's effectiveness by the following actions:

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not at all | Once in a while | Sometimes | Fairly often | Frequently, if not always |

___ 1. Persisted in dealing with difficult challenges.
___ 2. Kept focused on accomplishing the mission.
___ 3. Shared knowledge of the situation.
___ 4. Established and maintained appropriate priorities.
___ 5. Contributed to cohesiveness and teamwork.
___ 6. Maintained high performance standards for completing tasks.
___ 7. Was receptive to new information and ideas.
___ 8. Used AARs and debriefings constructively.
___ 9. Set an example by his behavior.
___ 10. Communicated clearly and precisely.
___ 11. Coordinated effectively internally and externally.
___ 12. Raised morale and enthusiasm.
___ 13. Took responsibility for his actions.
___ 14. Recognized outstanding performance.

**C.** Please comment in your own words on:

1) PLATOON LEADER STRONG POINTS:

2) PLATOON LEADER WEAK POINTS:

3) PLATOON SERGEANT STRONG POINTS:

4) PLATOON SERGEANT WEAK POINTS:

5) How well did the Platoon Leader & Platoon Sergeant **WORK TOGETHER:**

v11.7

ALL INFORMATION PROTECTED

SIDE 1

## PLATOON PERFORMANCE

*Post-Rotation Assessment*

**YOUR POSITION:**
Company CO___
Company XO___
1st Sergeant___

**Platoon Designation**
___ PLATOON
___ COMPANY
___ BATTALION

**PLATOON LEADER**

Use the following scale to indicate how frequently the PLATOON LEADER **contributed to the platoon's effectiveness** by the following actions:

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not at all | Once in a while | Sometimes | Fairly often | Frequently, if not always |

___ 1. Persisted in dealing with difficult challenges.
___ 2. Kept focused on accomplishing the mission.
___ 3. Shared knowledge of the situation.
___ 4. Established and maintained appropriate priorities.
___ 5. Contributed to cohesiveness and teamwork.
___ 6. Maintained high performance standards for completing tasks.
___ 7. Was receptive to new information and ideas.
___ 8. Used AARs and debriefings constructively.
___ 9. Set an example by his behavior.
___ 10. Communicated clearly and precisely.
___ 11. Coordinated effectively internally and externally.
___ 12. Raised morale and enthusiasm.
___ 13. Took responsibility for his actions.
___ 14. Recognized outstanding performance.

**A.** Taking into account the WEATHER, TERRAIN, SUPPORT, and OPPOSITION, HOW WELL DID THIS **PLATOON ACCOMPLISH ITS TACTICAL MISSION ?**

Circle One

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Much worse than could have been expected | Worse than expected | As well as could be expected | Better than expected | Much better than could have been expected |

**B. OVERALL ASSESSMENT** -- COMPARED TO SIMILAR PLATOONS, THIS **PLATOON PERFORMED OVERALL IN THE :**

BOTTOM FIFTH_____ NEXT LOWER _____ MIDDLE FIFTH _____ NEXT HIGHER_____ TOP FIFTH_____

| **C.** For this PLATOON, the THREE: a) **STRONGEST POINTS** are: | b) **WEAKEST POINTS** are: |
|---|---|
| 1. | 1. |
| 2. | 2. |
| 3. | 3. |

## APPENDIX B

**MLQ Sample Items:**

Inspirational Leadership

Q6 talks about the importance of the Army ethic and values.
Q10 makes us proud to be associated with him.
Q14 specifies the importance of having a strong sense of purpose.
Q21 acts in ways that build respect.
Q23 makes moral and ethical decisions based on high standards.
Q34 emphasizes the importance of having a collective sense of mission.

Intellectual Stimulation

Q1 seeks different points of view when solving problems.
Q32 suggests new ways of looking at how to complete assignments.
Q36 reviews basic assumptions about the way we do things to see if they are appropriate.

Individual Consideration

Q15 spends time teaching and coaching Platoon members.
Q19 treats each Platoon member as an individual.
Q29 considers that you have different needs, abilities, and aspirations from others.
Q31 helps Platoon members to develop their strengths.

Contingent Reward

Q8 rewards us when we do what we are supposed to do.
Q11 states who is responsible for getting the job done.
Q16 makes clear exactly what Platoon members will get if performance goals are met.

Management-by-Exception

Q24 keeps track of all mistakes.
Q27 directs attention toward failures to meet standards.

Passive Leadership

Q3 fails to take action until problems become serious.
Q12 waits for things to go wrong before taking action.
Q10 makes us proud to be associated with him.
Q28 avoids making decisions.
Q33 delays responding to urgent problems.

**TMLQ Sample Items:**

Inspirational Leadership

Q2 are proud to be associated with each other
Q22 display extraordinary talent and competence
Q34 talk about how trusting each other can help overcome our difficulties
Q44 emphasize the importance of having a collective sense of mission
Q16 generate exciting future possibilities
Q36 talk enthusiastically about how we achieve our mission

Intellectual Stimulation
Q8 emphasize the value of questioning each other's ways to solve problems
Q18 encourage each other to rethink ideas
Q28 try to find better ways to do things
Q38 seek a broad range of views when solving problems

Developmental Exchange
Q7 clearly communicate what each member needs to do to complete assignments
Q10 listen to each other's concerns
Q20 focus on developing each other's capabilities
Q25 provide each other with assistance in exchange for each member's effort
Q45 recognize member and/or Company accomplishments
Q48 help each other learn new skills

Management-by-Exception
Q13 closely monitor each other's performance for errors
Q23 spend time dealing with immediate crises

Passive Leadership
Q3 allow performance to fall below minimum standards before trying to make improvements
Q11 delay taking action until problems become serious
Q31 wait until things have gone wrong before taking action
Q9 avoid dealing with problems
Q19 fail to follow-up requests for assistance from each other
Q29 avoid making decisions
Q39 delay responding to urgent requests from each other