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ARI Research Note 93-11

# The Joint Readiness Training Center's Training and Evaluation Outline Data Base

## Preliminary Assessment

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<b>13. ABSTRACT (Maximum 200 words)</b> The purpose of this research was to determine the usefulness of Training and Evaluation Outline (T&EO) data from unit rotations at the Joint Readiness Training Center (JRTC) as a means of determining unit performance. Infantry platoons and companies from five unit rotations were examined. Analyses included performance comparisons of both platoons and companies and a detailed examination of four selected tasks. Unexpected patterns in the data raised questions about the accuracy of the ratings (e.g., possible rater bias). Several critical errors in the data base were also discovered. These errors make the data unsuitable for use in determining training focus. The author concluded that changes in the data base are needed before it can be used to document unit performance. Through joint efforts by researchers and observer/controllers, the data collection effort could be improved. Additionally, followup efforts must take place to reduce possible rater biases and to ensure data entry quality control.				
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THE JOINT READINESS TRAINING CENTER'S TRAINING AND EVALUATION  
OUTLINE DATA BASE: PRELIMINARY ASSESSMENT

EXECUTIVE SUMMARY

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Requirement:

The purpose of this research was to determine the usefulness of the Training and Evaluation Outline (T&EO) data base archives from the Joint Readiness Training Center (JRTC) for measuring unit performance. A need for measures of unit performance at the Combat Training Centers was identified during the U.S. Army Research Institute for the Behavioral and Social Sciences Fort Benning Field Unit's Light Infantry Home Station Determinants research.

Procedure:

T&EO data at platoon and company levels were analyzed from five JRTC unit rotations during fiscal year 1990. One analysis consisted of using T&EO ratings to compare unit performance. The second analysis used two platoon and two company tasks to perform task analyses. Overall frequencies from the five rotations were calculated for all four tasks.

Findings:

The T&EO data base as currently configured did not offer any advantage over other forms of data for comparing unit performance or for providing units detailed information for determining training focus. Patterns of performance were detected that raised questions about the accuracy of the ratings (e.g., possible rater bias). In addition, many errors in the coding of the data were discovered. The nature of the errors made analyses by mission impossible. Because of the obvious errors that were found, potential users should use caution when using the T&EO data base.

## Utilization of Findings:

The research findings have been provided to the Commanding Generals of the U.S. Army JRTC and the U.S. Army Infantry School and Center. The research has become a catalyst to begin improving the JRTC performance measurement system. Recommendations for improving the utility of the T&EO data base include a reduction of observers/controllers' (O/C) workload by less detailed T&EOs; O/C training; placing higher priority on T&EO data collection; data base automation at data entry levels; and increased quality assurance.

THE JOINT READINESS TRAINING CENTER'S TRAINING AND EVALUATION  
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THE JOINT READINESS TRAINING CENTER'S TRAINING AND  
EVALUATION OUTLINE DATA BASE: PRELIMINARY ASSESSMENT

Introduction

The information and data recorded at the Combat Training Centers (CTCs) offer researchers and trainers potential measures of unit performance. Although the primary objective of the CTCs is to provide realistic training to soldiers, data on unit performance are collected and archived. The accuracy and completeness of these data are critically important because they may be used to establish performance trends and to compare units. Performance trends can be established by examining specific tasks over time to determine strengths and weaknesses. The observed strengths and weaknesses could be useful for units when planning priorities of training or by researchers as a means of assessing changes in doctrine or training. For example, suppose that an analysis of the company task "develop and communicate plan based on the mission" revealed that the majority of companies fail because they do a poor job of conducting reconnaissance. Then suppose that an examination of the relevant subtask standards revealed that the critical information collected is not properly used to confirm or deny the plan. Units already focus training on conducting reconnaissance because it is identified in ARTEP 7-10 "Mission Training Plan for the Infantry Rifle Company" (Department of the Army, 1988a) as a critical subtask. However, data suggesting the contributory subtask standards that lead to success or failure would provide units with specific areas of training focus.

The focus of this paper is to determine the utility of the existing Training and Evaluation Outline (T&EO) checklist information archives from the Joint Readiness Training Center (JRTC) in establishing performance trends and comparing unit performance. T&EO data on Infantry rifle platoons and companies from five unit rotations conducted during the fiscal year 1990 (FY90) were used in this study.

T&EO Data Base

To investigate how the T&EO data base might be used for performance assessment, an understanding of the nature of the data base is needed (see Nichols, 1991). The following discussion provides information about the data source, the stored data format, and general precautions to consider when accessing the data.

## Data Source

Data are collected via T&EO checklist books filled out by JRTC Observer/Controllers (O/Cs). O/Cs fill out the T&EO checklists for the echelon and element to which they are assigned (e.g., A Company, 1st Platoon). The T&EO checklists consist of tasks, task standards, subtasks, and subtask standards. These checklists were developed from Army doctrine (Nichols, 1991). The Infantry platoon and company T&EO tasks that this paper examined almost exclusively mirror the Mission Training Plans (MTP) from ARTEP 7-8 "Mission Training Plan for the Infantry Rifle Platoon and Squad" (Department of the Army, 1988b) and ARTEP 7-10 "Mission Training Plan for the Infantry Rifle Company" (Department of the Army, 1988a). The T&EOs have been developed to reflect all battlefield operating systems and to include attached combat support elements. About 360 T&EO tasks are used at JRTC (Nichols, 1991).

O/Cs rate the T&EO tasks as Trained, Needs Practice, or Untrained (T, P, or U). The standards associated with a particular task are rated on a GO/NOGO basis. Likewise, the subtasks and subtask standards are rated on a GO/NOGO basis. Upon rotation completion, the T&EO ratings are given to data management personnel for entry into the automated data base system.

## Data File Format

Rotation T&EO data are coded in a flat file format compatible for importing into the Statistical Package for the Social Sciences (SPSS). Table 1 identifies the variables that are most useful in describing unit performance.

The structure of the data base is such that the user must select the variable of task before any standards or subtasks can be analyzed. This is because the variable names for standards (i.e., STD1-STD12) and subtasks (e.g., 1, 2, 3, etc.) are the same for all tasks. In order to analyze subtask standards, the task of interest as well as the subtask of interest must be selected. Again, the variable names for the subtask standards (i.e., STS1-STS45) are the same for all subtasks. Although this format allowed for minimal effort in developing the data base, it makes it difficult for the user to access the data of interest (see Table 2 for an example of the file format).

Examination of Table 2 aids in demonstrating the difficulty in analyzing the T&EO data. The data base contains 23 lines of data to capture one platoon's rating on task 611, "prepare for combat." Each line repeats all variables in the data base whether they are relevant to the task or not. For example, line one contains rating data of the overall task, task standards, subtask 1, and the subtask standards associated with subtask 1.

Table 1

T&EO Variables Required for Describing Unit Performance

<u>Variable Name</u>	<u>Variable Description</u>
ROTID	Code identifying the rotation
TFMSN	Code identifying the overall mission assigned to the task force
Phase	Code identifying the phase of the rotation
Element	Code identifying the echelon (e.g., A company, 1st platoon)
Task	T&EO task number
TASKSTAT	T, P, U, rating associated with task
TSTD1-TSTD12	GO/NOGO rating associated with task standards
Subtask	Subtask number associated with task
Subscore	GO/NOGO rating associated with subtask
STS1-STS45	GO/NOGO rating of subtask standards associated with subtask (maximum of 45 subtask standards)

Line 2 contains rating data for subtask 2 and the subtask standards associated with subtask 2. The ratings for overall task and task standards contain dots because they become irrelevant after line 1.

Once the data have been analyzed, the analyst must still match the variables with the T&EOs in order to make sense of the data. For example, TSTD1 equals "Unit moves by the time specified in the order" for the platoon task "prepare for combat." The analyst determines this by matching the actual T&EO checklist tasks, task standards, subtasks, and subtask standards with the variable names. Because the checklists do not contain



the variable names, the analyst must produce the names by counting down the T&EO checklist (e.g., TSTD1 equals the first task standard in the checklist). This becomes quite labor intensive for the analyst.

### General Cautions

The T&EO data base has evolved over time. For example, task standards were added to company and platoon T&EOs after being absent for FY88 and about half the FY89 rotations. Most of the subtasks and subtask standards did not change at the time the standards were added, but they have changed at other times. Therefore, careful examination of the task documentation must be done by the analyst to insure that variables of interest are constant across rotations.

Another consideration is that completion of the T&EO checklists is not the primary mission of JRTC O/Cs. Consequently, O/Cs typically fill out the T&EO checklists after the rotation. This time delay can be as much as a week or two (personal conversations and interviews with platoon and company O/Cs, Spring, 1991). These time delays could result in O/Cs filling out the T&EOs based on their overall impression of the unit (Crumley, 1989). As Crumley (1989) pointed out, this systematic rating error has long been a problem when individual units are rated by observer/controllers. Thus, data on a specific task and its sub-components may not accurately reflect the actual observed performance.

Problems also exist with the T&EO rating scale. Decision criteria for determining the rating status of tasks (i.e., T, P, or U) and the task standards, subtasks, and subtask standards (i.e., GO or NOGO) are left up to the individual O/Cs. The unclear definitions of the rating categories may introduce O/C bias. Also, the limited rating categories may not allow the O/Cs a wide enough range to discriminate good performance from poor performance.

Finally, the user has no control over the data entry process. If errors are encountered, there is no way of knowing whether the errors are O/C related or clerical errors. Unit take home packages can be used to cross reference a small portion of the data. For example, the unit take home package contains the task force mission conducted during each phase of the rotation. The two variables of PHASE and TFMSN can be checked in the T&EO data base by matching them to the take home package.

### Scope

As stated previously, the purpose of this paper is to define the extent to which T&EO data from JRTC can be used for analyzing performance trends and/or comparing unit performance. T&EO data

exist for echelons ranging from platoon to the task force level. Only platoon and company level data from five rotations conducted during FY90 were examined. These rotations were selected because they were all active Army units (i.e., Light Infantry or Airborne) and because the data base structure was stable during this time frame. Infantry platoon and company echelons also provided a sample size large enough that potential differences in performance could be observed.

## Method

### Data Base Manipulation

T&EO data are stored as SPSS importable files. Data are available on floppy disc. Because of the amount of data, several discs are needed to capture one rotation's data. The data from the five rotations were concatenated to form five files, one file for each rotation. Subsequent manipulations to the data were performed using the Statistical Analysis System (SAS) software package. However, the actual procedures were very similar to those reported by Nichols (1991).

The data files were then filtered to create a "company" and a "platoon" file for each rotation. The company files from each rotation were concatenated to form one master company file. The same procedure was performed on the platoon files to create a master platoon file. This reduced the file sizes, thereby increasing the speed in analyzing company and platoon performance.

### Unit Performance

Overall task status percentages were calculated based on the categories of trained, needs practice, and untrained. These percentages were calculated across all tasks for each company and platoon. The percentages encompassed each unit's entire rotation. Also, the percentage of GOs for task standards, subtasks, and subtask standards were calculated for each company and platoon. It was thought that these four measures would provide an overall snapshot of unit performance. However, it may not be appropriate to compare units in this way because they perform different tasks under a variety of task force missions. Thus, to reduce the variability in number of tasks and missions, an additional analysis was planned using the same measures for only the Task Force Mission "Defend". Task force mission "Defend" was chosen because it was common across rotations.

### Task Analysis

Four tasks were selected for task analyses. The platoon tasks "defend" and "prepare for combat" were selected from the platoon sample. The company tasks "defend" and "develop and

communicate a plan based on the mission" were selected from the company sample. All four tasks were selected from the task force mission "defend". The number of units receiving GOs and NOGOs for each task standard, subtask, and subtask standard were calculated for the four tasks. The number of units receiving ratings of trained, needs practice, and untrained were also calculated. It was thought that task strengths and weaknesses would become apparent by the performance trends of all the units.

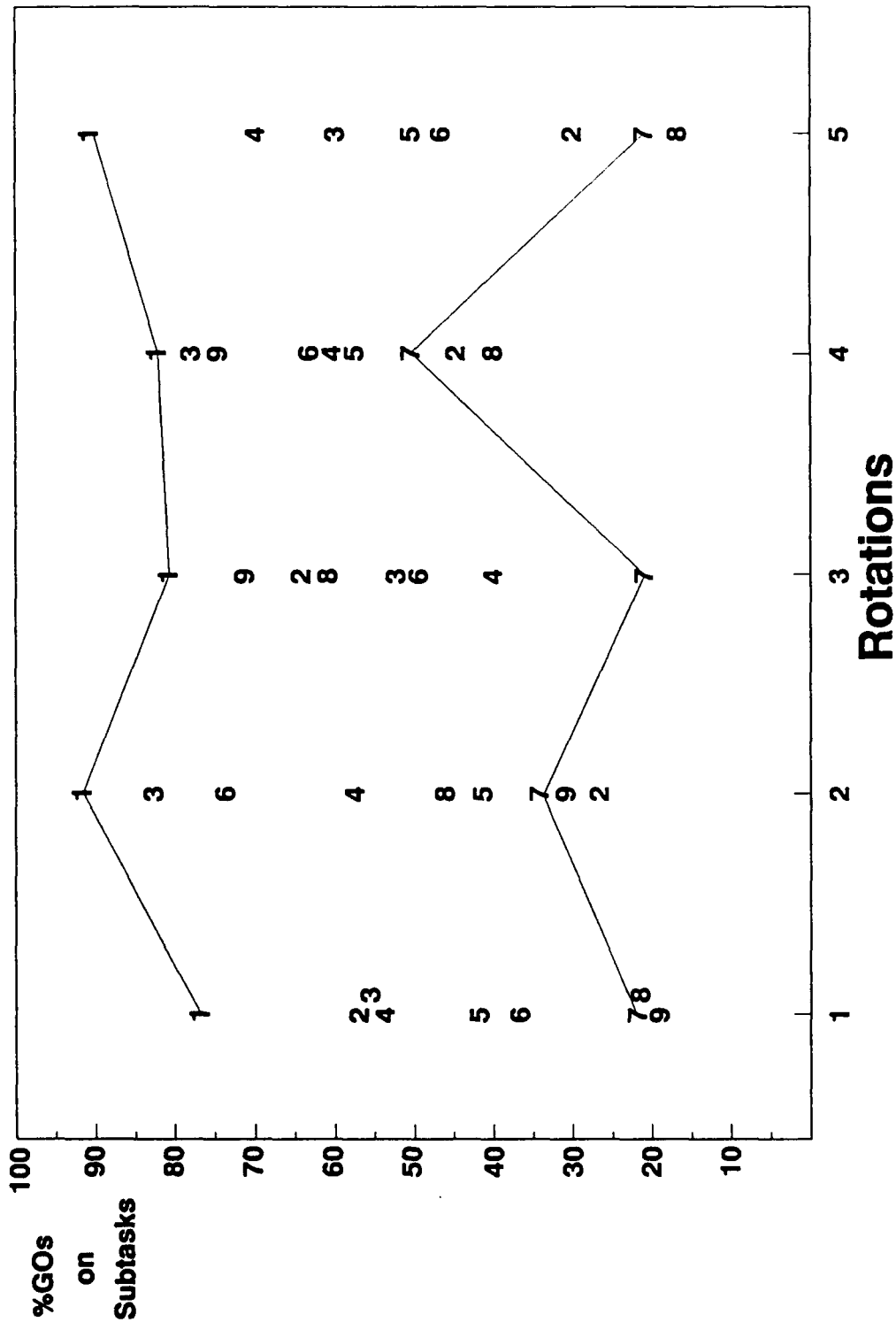
Although the scope of the present analyses does not allow observation of trend line type information, the procedure used to perform the task analyses is similar to performance trend line analyses. The major difference is that for trend lines researchers would compile ratings on specific tasks over time. Any changes in the ratings over time could then be linked to any known changes in training or doctrine. Therefore, if the T&EO data base can provide useful information on task performance for the five rotations, the T&EO data base could be a useful tool for conducting trend line analyses.

## Results and Discussion

### Unit Performance

Potential measures of unit performance based on the T&EOs were; percentages of GOs for task standards, subtasks, subtask standards and the percentages of the overall task status (ie., T, P, or U). A decision was made to use percentage GOs on subtasks because the overall task status of trained, needs practice, and untrained did not offer enough variability to discriminate units. For example, the company analysis revealed that only 12 company tasks had ratings of trained for the entire five rotations. There were 78 ratings of needs practice and 217 ratings of untrained for remaining company tasks over the five rotations. Several companies were not rated as trained on any task. Platoon ratings also did not discriminate performance. Therefore, use of percentage GOs on subtasks was used in an attempt to discriminate companies and platoons. Task standards and subtask standards can be used because they are related to the subtasks and will provide similar results. However, subtasks were chosen because the subtask level contains designators of subtask criticality as well as designators of leader performed subtasks. This allows researchers the option of analyzing performance in terms of GOs on critical subtasks and/or GOs on leader subtasks.

Platoon comparisons. Figure 1 summarizes the GO percentages for all subtasks by platoon. Within each rotation, platoons were assigned a number from one to nine. The number designating a particular platoon was based on its ranking from Rotation 1. Platoons were ranked from highest percentage of GOs (1) to lowest percentage of GOs (9) for Rotation 1. The unit designators assigned to the platoons for Rotation 1 were kept consistent



**Figure 1. Percentage of GOs on subtasks for rifle platoons over five rotations**  
**Note. No data available for Platoon 5, Rotation 3 or Platoon 9, Rotation 5.**

throughout the five rotations. Thus, if A company 1st platoon was ranked 1st in Rotation 1, its assigned number remained one for all rotations.

From a measurement standpoint, sufficient variability among the platoons can be observed to make performance comparisons. The GOs ranged from a low of 18% (Platoon 8, Rotation 5) to a high of 94% (Platoon 1, Rotations 2 & 5). The greatest range within a single rotation occurred for Rotation 5. Rotation 4 had the least variation within a single rotation.

Further examination of Figure 1 reveals, however, that a potential problem exists in interpreting the results. There is a definite pattern for at least two platoons over the entire five rotations. This pattern is highlighted in Figure 1 with two solid lines. It is extremely unlikely that the top performing platoon would be the same platoon across five rotations. This is coupled with Platoon 7 being ranked consistently near the bottom for all five rotations. One possible explanation is rater bias because O/Cs are typically assigned positions with unit structure. Thus, it is possible that the same O/C rated Platoon 1 for all five rotations. Although it is not possible to determine the exact causes from the data available, the pattern of results certainly raises some concern.

An overall performance rating for each platoon may be inappropriate because the ratings come from potentially different missions. A more appropriate measure may be to compare the platoons on common missions. Table 3 summarizes the percentage of GOs on subtasks for all platoons rated for the task force mission "Defend." The percentage of GOs ranged from a high of

Table 3

Percentage of GOs on all Subtasks Rated During the Task Force Mission "Defend" over the Five Rotations

Rotation	Platoon								
	1	2	3	4	5	6	7	8	9
1	79	57	56	42	53	38	26	21	20
2	91	72	27	<i>100</i>	33	<i>50</i>	36	44	27
3	83	53	70	42	0	58	50	64	69
4	83	89	40	52	80	79	60	19	0
5	94	52	0	82	28	62	19	0	0

Note. Percentages in italics indicate that fewer than five subtasks were rated. Zero indicates no available data exist.

94% to a low of 19%. The overall proportion of GOs for subtasks rated during the task force mission "Defend" was 54%. Examination of Table 3 reveals that Platoon 1 exceeded 54% GOs by at least 25% for all five rotations. This pattern of results is similar to that observed in Figure 1.

To determine the appropriateness of an overall performance rating versus a mission specific performance rating, a correlational analysis was conducted between the percentages of GOs compiled over all missions with the percentages of GOs compiled for just the task force mission "Defend". At least a moderate positive correlation was expected because of the 8,428 subtasks rated for the five rotations, 2,878 (34%) subtasks were rated under the task force mission "Defend". However, the correlation was quite high and statistically significant,  $r(36) = .90$ ,  $p < .05$ . During the analysis, it was found that seven platoons out of the 40 represented were rated only under the task force mission "Defend". Thus, the high correlation could be a result of a statistical artifact. However, the correlation was still high,  $r(29) = .87$ ,  $p < .05$ . when these seven platoons were deleted from the analysis.

Because of the high correlation between the percentage of GOs for platoons over all missions with the percentage GOs for platoons over the task force mission "Defend", an overall performance rating may be appropriate. Compiling an overall rating for each platoon based on all missions may provide researchers with a sufficient performance measure. It also has the added advantage of fewer missing platoons. In the present analysis, there were an additional five platoons that had missing or insufficient data when only the task force mission "Defend" was examined.

The rather high correlation between overall mission performance and "Defend" mission performance may not be just a result of the "Defend" mission being a subset of the overall rotation. Because O/Cs fill out the T&EOs after rotation, each mission may reflect the O/C's overall impression of the unit's performance (Crumley, 1989). It could also be that a good platoon performs well over all missions and a poor platoon performs poorly over all missions.

Two unplanned platoon comparison analyses were conducted based on the discovery that several platoons were rated only for the task force mission "Defend" and the finding that several platoons were rated on a low number of subtasks. Because of those unexpected findings, a more thorough analysis of the number of task force missions as well as the number of tasks rated by platoon was needed. Based on information from unit take home packages, most unit rotations contain three or four task force missions. Therefore, it should be expected that in most cases platoons will have at least a few tasks rated for all task force

missions. The number of tasks actually performed by platoons can not be determined from the take home packages, but it was thought that knowledge of the number of rated tasks found in the T&EO data base might reveal possible causes for the pattern of results found in Figure 1 and Table 3.

The first comparison examined the number of task force missions rated for each platoon. The number of rated task force missions for each platoon are presented in Table 4. The number of rated task force missions ranged from zero to four. By comparing the number of task force missions rated for each platoon with the actual number of task force missions, it can be seen that few platoons received task ratings for all task force missions. The apparent conclusion is that the data are incomplete.

Table 4

Number of Task Force Missions Rated for Each Platoon over the Five Rotations

Rotation	Actual TFMSNs	Platoon									
		1	2	3	4	5	6	7	8	9	
1	3	1	1	1	2	2	1	2	1	1	
2	4	4	3	4	4	4	3	4	4	3	
3	3	2	3	2	1	0	2	2	2	3	
4	4	4	3	3	3	4	3	4	3	2	
5	3	3	2	1	2	3	2	3	1	0	

Note. Zero indicates no available data exist.

The second unplanned platoon comparison examined the number of rated tasks for each platoon. It is possible that performance differences based on percentages could be affected by differences in the number of rated tasks. Table 5 summarizes the total number of rated tasks for each platoon across the five rotations. Rated tasks ranged from 0 to 41. It was expected that the number of platoon tasks would vary depending on the specific missions. However, there were some unexpected consistencies found in the number of rated tasks within some platoons across the five rotations. For example, Platoon 7 was always rated on the most tasks and Platoon 8 was rated on the fewest. Although it is not known if platoons 7 and 8 had no change in O/Cs for the five rotations, it seems possible that these consistencies resulted from an O/C bias. A likely possibility is that some O/Cs had a tendency to rate the same number of tasks for the platoons they observed regardless of the actual number of tasks performed.

Further examination of platoons 1 and 7 provides evidence that the performance differences observed previously in Figure 1 do not appear to be a result of differences in the number of rated tasks. That is because both platoons were rated on a relatively high number of tasks across the five rotations.

Table 5

Number of Tasks Rated for Each Platoon Over the Five Rotations

Rotation	Platoon								
	1	2	3	4	5	6	7	8	9
1	22	24	20	13	27	15	31	8	21
2	33	16	24	16	19	17	39	16	30
3	30	14	10	10	0	17	40	8	13
4	32	12	25	23	30	13	41	5	12
5	24	26	7	17	25	16	33	4	0

Note. Total included all iterations of tasks because some tasks (e.g., "Prepare for Combat") are performed during each task force mission. A zero indicates that no available data exist for that particular platoon.

Company comparisons. Table 6 contains the percentages of GOs on subtasks for all companies across the five rotations. Compared to the platoons, companies generally received fewer GOs.

Table 6

Percentage of GOs on Subtasks for Rifle Companies over the Five Rotations

Rotation	Company		
	X	Y	Z
1	49	45	38
2	55	35	66
3	13	42	30
4	63	48	81
5	17	28	10

Note. Rifle companies were randomly assigned the letters X, Y, or Z. This company designator was kept consistent across all five rotations.

The overall GO rate for platoons was 54%, whereas the company overall GO rate was 41%. Only four of the 15 companies received greater than 50% GOs on their subtasks. Seven companies received less than 40% GOs on their subtasks. Unlike the platoon ratings, examination of Table 6 does not reveal any obvious O/C rating biases.

A summarization of percentage of GOs on subtasks rated during the task force mission "Defend" did not differ from subtasks compiled on all missions. Companies received 42% GOs during the task force mission "Defend" and 41% GOs overall. Because this is similar to what was found for the platoons, further detailed results will not be reported.

As with the platoons, it was decided to compare companies by number of rated task force missions and number of rated tasks. Although the subtask percentages were similar for overall missions and task force mission "Defend", there is the potential that the rated performance could reflect different missions and tasks. A company held in reserve may not perform as many tasks and/or the performance may not be under the same conditions. Table 7 contains the total number of task force missions contained in the data base for all companies. Task force missions ranged from one to four. Rotation 1 contained two companies that were rated only on one task force mission (defend). As with the platoons, it appears that companies are not rated under all task force missions that actually occurred.

Table 7

Total Number of Task Force Missions for Rifle Companies over the Five Rotations

Rotation	Actual TFMSNs	Company		
		X	Y	Z
1	3	1	2	1
2	4	3	3	4
3	3	2	2	2
4	4	4	3	4
5	3	3	2	2

Table 8 contains the total number of tasks rated by O/Cs for all companies across the five rotations. Examination of the table reveals that there is variability among the companies in terms of tasks rated. Rated tasks range from a low of nine to a

high of 36. Z Company is rated on the fewest tasks in all five rotations. It is unlikely that five different units chose to put Z company in situations that would result in the fewest performed tasks. A more likely explanation is that the Z Company O/C did not rate all the company tasks that were performed.

Table 8

Total Number of Rated Tasks for Rifle Companies over the Five Rotations

Rotation	Company		
	X	Y	Z
1	32	25	11
2	28	30	13
3	28	26	9
4	36	26	14
5	31	28	9

Note. Total included all iterations of tasks because some tasks are performed during each task force mission.

Task Analysis

Two platoon tasks and two company tasks were selected to determine the feasibility of performing trend line type analyses using the T&EO data base. It was not the purpose of this study to generate actual performance trend lines, but to determine whether or not the T&EO data base is useful for such analyses. The same procedures used here for the task analysis could be used over a longer period of time to determine trend lines.

All tasks were selected from ratings during the task force mission "Defend". The number of platoons rated as trained, needs practice, and untrained for the overall task status of each task were calculated. Also, the number of platoons receiving GOs for task standards, subtasks, and subtask standards were calculated for each task. For discussion, the data were converted to percentages. All percentages were calculated from only the platoons receiving GOs and NOGOs.

Platoon Task Defend. According to the O/C ratings, the overall performance of platoons for the task "defend" was low. No platoons were rated as fully trained. Further examination of the data revealed that the majority of the platoons received fewer GOs than NOGOs on the task standards, subtasks, and subtask standards. An example of two subtasks that were performed poorly

by the majority of platoons were: "Plt ldr establishes task priorities based on METT-T" (31% GOs) and "Plt ldr selects alternate and supplementary positions" (23% GOs). Platoons were rated highly on some subtasks. For example, the subtask, "The platoon leader recons the battle position", received 73% GOs. All data pertaining to the platoon task "Defend" are presented in Appendix A, Table A-1.

There were a few data base problems that rendered the results difficult to interpret. Initially, the procedure for conducting the task analysis was to select the variable task force mission (TFMSN) "Defend". Then select the platoon task "Defend". When this was done, there were only 26 platoons. However, by selecting the task "Defend" without regard for the task force mission, 42 platoons were identified. Although it is possible for platoons to perform the task defend during an offensive task force mission, it is unlikely that 16 platoons did. The probability is further reduced by the fact that these platoons were not rated on the task "Defend" during the task force mission "Defend". Apparently, the TFMSN code did not accurately reflect the conditions in which the task was actually performed.

Another problem was the clerical errors found in the data. Subtasks 10, 23, 27 and 31 contained extraneous data. For example, subtask 10 "The platoon leader recons the battle position," had five subtask standards (sts1-sts5). However, the data base contained two NOGOs for a non existent sixth subtask standard. For subtask 23, "The platoon prepares defensive positions," two of the subtask standards are for explanation and are not variables: 23a (sts1) "Fighting positions are constructed to provide:" and 23b (sts7) "Fighting positions:". These explanation variables are contained in the T&EO checklists as phrase stems for subsequent subtask standards. The data base contained GOs and NOGOs for these variables. In addition to these problems, the total number of platoons varied within the task defend. Subtask 11 contained 41 of the platoons and subtask 32 contained only 39 of the platoons. If the subtasks had simply not been filled out, the "miss" column would reflect the missing platoons. The only explanation is that the whole line containing all the variables associated with those subtasks did not get into the data base for some of the platoons.

Platoon Task Prepare for Combat. Compared to the task "Defend", platoons received more GOs on the task "Prepare for Combat". Three platoons were rated as trained with 22 platoons rated as needs practice and only 16 platoons rated as untrained. Also, most of the task standards, subtasks, and subtask standards were rated as GO for at least half the platoons. Of the subtasks, one of the poorest performed was "Plt performs continuous recon during the operation". Only 18% of the platoons received GOs. The subtask for which most platoons received GOs

was "Plt ldr issues a warning order to the PSG & squad ldrs (Step 2, TLP)". Ninety-three percent of the platoons received GOs. Detailed results are presented in Appendix A, Table A-2.

Some of the same types of data base problems found during the task "Defend" were encountered during the analysis of "Prepare for Combat". Table A-2 contains the data as found in the data base. No attempt was made to "clean" it up. Although the total number of platoons rated was 42, only 34 different platoons were represented in the data base. apparently, several of the platoons were rated on the task more than once. An incorrect task force mission code is one reason why some platoons were rated more than once and why some platoons were not rated at all for task force mission "Defend". This was determined by crosswalking the TFMSN variable with the PHASE variable. By examining the take home packages, the phase in which the task force mission "Defend" occurred for a particular rotation was ascertained. Many platoons had the same TFMSN code (e.g., defend) for every rated task during the rotation. This may explain the results in Table 4 and why the number of rated tasks did not seem to vary as a function of the number of task force missions rated (compare Table 4 with Table 5). Tasks with multiple ratings for a particular task force mission did have different phase codes (e.g., 1, 2, 3). However, the phase code could not always be matched with AARDATE.<sup>1</sup> Because the three codes do not always match, it is nearly impossible to determine when in the rotation some of the tasks were performed.

Other clerical errors were found in the data base for the task "Prepare for Combat". Subtasks 1, 3, 4, and 11 contained extraneous data. For example, Subtask 3, "The platoon leader completes mission analysis," has only two subtask standards (sts1 & sts2). There was one NOGO for a non-existent fourth subtask standard.

Company Task Defend. Compared to the platoon data, the overall ratings for the company task "Defend" were low. Only one company received a task rating of needs practice. The remaining companies were rated as untrained. On the four subtasks, companies were rated low on all aspects of "Defend" (i.e., plan, prepare, execute, and consolidate & reorganize). Two companies received GOs for plan, no company received a GO for prepare, one company received a GO for execute, and two companies received GOs

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<sup>1</sup>AARDATE is not one of the variables included in Table 1. It refers to the date various elements from the rotation received their after action reviews. The AARDATE, PHASE, and TFMSN can be found in the unit take home package. They should all match in the T&EO data base.

for consolidate and reorganize. Detailed results are presented in Appendix B, Table B-1.

As with the platoon tasks, there were obvious discrepancies in the data. Only eight of the 15 companies were rated on the task "Defend" for the task force mission "Defend". The rest of the companies were rated on the task "Defend" under offensive task force missions. It is likely that the variable of TFMSN was incorrectly coded and thus did not reflect the actual occurrences of when the task "Defend" was performed. Further, one company (X Co, Rotation 4) was rated twice on "Defend". One rating was under the task force mission "Defend" and the other was for task force mission "Conduct a Deliberate Attack". By examining all the variables for the two ratings, it was found that only one variable (one of the task standards) had a value for the task "Defend" rated under the task force mission "Conduct a Deliberate Attack". This same variable was the only one missing from the task "Defend" rated under the task force mission "Defend". Thus, it appears that the second rating for X Co, Rotation 4 was an inadvertent typographical error. The data shown in Table B-1 reflect the 15 companies rated on defend without the "repeat" of X Co Rotation 4 and without regard to the recorded task force mission.

Company Task - Develop/Communicate Plan Based on Mission.

When the TFMSN code selected was "Defend", the data base showed 18 companies rated for the task "Develop and Communicate Plan Based on Mission". By examining the individual companies for each rotation, it was found that X and Z companies were rated three times for Rotation 1 and Y company was missing for Rotation 1. Again, an error in the recording of the TFMSN code made it impossible to determine which ratings from Rotation 1 belonged under the task force mission "Defend". Further examination of the data base for Rotation 1 showed that all three companies were rated on the task three times (once for each phase). However, the three ratings for Y Co, Rotation 1 were coded under the task force mission "Conduct an Infiltration Attack". A decision was made to report the data as they were found in the data base. Thus, the total number is 18 companies rated on "Develop and Communicate a Plan Based on the Mission" for the task force mission "Defend".

Of the 18 entries, three received ratings of trained, three received ratings of needs practice, and 12 received ratings of untrained. The subtask "Make a tentative plan" had the least percentage of GOs (27%). The subtask "The cdr issues instructions to initiate preparation activities" had the highest percentage of GOs (76%). The detailed results are presented in Appendix B, Table B-2.

Clerical errors were prevalent in the data base. As was the case with the platoon data, explanation variables serving as

phrase stems were rated (e.g., "Did the task organization:" and "Did the OPORD contain:"). The total number of recorded companies fluctuated between 17 and 18. Subtask 4 contained only 17 company entries. The data from Subtask 4 and its subtask standards were missing from the data base for X Co Rotation 4. If the subtask had been "not applicable" or "not observed" for that company, the data should have been reflected by the "Miss" column in Table B-2. However, no data were available.

### Conclusions and Recommendations

One purpose of the JRTC T&EO data base is to provide detailed information on unit and slice element performance for all tasks. The T&EO data base in its FY90 format falls far short of providing the detailed information needed to conduct analyses on company and platoon tasks. Data entry errors, errors of omission, and possible O/C biases all contribute to a data base that can not be trusted to answer specific questions. Unless the data base can provide more accurate, complete, and detailed information than the unit take home packages, it is counter productive to attempt to use it.

Problems found in the data base make the effort involved in analyses greater than the potential return. The unwieldiness of the data base is the first problem to overcome. There is no way to assess the data by simply scanning it because of the repetitive nature of the variables. Data extraction is also difficult because statistical procedures involving numerous steps are required just to obtain frequency counts. An example of what can happen as a result of the structure of the data base was found in a report submitted to JRTC by BDM (1991). In this report, an attempt was made to report the total number of GOs and NOGOs on subtask standards rated during night infiltration attacks. The data actually reported reflect a summation of both subtasks and subtask standards. Obviously, this was not what the authors intended.

The unit trends found in the data posed another problem. There were definite patterns in performance and in the number of tasks rated for some units. These trends indicated that the data base may not accurately reflect unit performance, but rather O/C biases. Finally, consistent data entry errors were found. Given the sample size and the level of detail of the analyses, it must be assumed that there are many more data entry errors that can not be determined without the raw data contained in the original O/C checklists.

The T&EO data base has and will change over time. The problems with the data base found in this paper were based on only platoon and company data from five FY90 rotations. Before researchers use the T&EO data base from other fiscal year rotations, a few preliminary checks can be made to determine the

quality of the data. First, select one of the tasks to be analyzed. Print out one iteration of the task that includes the task standards, subtasks, and subtask standards. If the format is similar to FY90, the print out should look something like Table 1. Then match this with the actual documentation containing the task standard, subtask, and subtask standard statements. This would recreate the original checklist for that particular task. Then using the unit take home package, attempt to crosswalk the variables TFMSN, PHASE, and AARDATE for several tasks. Can you get them all to match in the data base? Then check which tasks are rated under improbable task force missions. For example, did you frequently find that "breach an obstacle" was rated during the "Defend" task force mission or that the task "Defend" was frequently rated during the "Infiltration Attack" task force mission? If after performing these checks no problems have been encountered, then proceed with your analysis keeping in mind the cautions cited on page 4.

Several changes need to be enacted before the T&EO data base can be used to any great extent. The present data base entry requirements are too detailed and the O/C workload is too great to insure accurate data. A less detailed data base that remains based on the appropriate MTPs would reduce the O/C workload and increase the likelihood of accurate and complete data. However, O/C training that includes decision criteria for rating and an increased priority placed on completing the checklists are also needed to increase the value of the data base. In addition, an automated data base could reduce many of the data entry errors. An automated system could be developed that would block out entries in inappropriate blocks. Periodic follow-up is needed for quality assurance. This quality control procedure would check for clerical errors as well as possible O/C trends. The variables need to have face validity so that someone scanning the data can get a feel for the data prior to analyses. By making these major changes, the information in the data base could be used more extensively.

Until the needed changes occur, trainers and researchers will need to rely primarily on the information contained in the unit take home packages and the after action reviews. Dyer (1992) provides a methodology for using archival information from the JRTC for research purposes. The T&EO data base is supposed to allow trainers and researchers a means to quickly analyze various issues. The detailed information at the task level could be used to identify unit performance problems and possible causes. Additionally, performance baselines could be established for subsequent testing of different training strategies. However, without a useable T&EO data base, trainers and researchers will need to continue to use the less detailed and more cumbersome sources of archival information.

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APPENDIX A  
FREQUENCY TABLES OF PLATOON TASKS:  
DEFEND AND PREPARE FOR COMBAT

Table A-1

O/C Frequency Ratings of Task 332: Defend (Platoon/Squad)

TASK TRAINING STATUS: (T, P, or U)	T	P	U	Miss <sup>1</sup>
	0	14	23	5

CONDITIONS: The platoon is ordered by the company commander to stop for an indefinite period. The platoon leader orders the platoon to establish hasty fighting positions.

OR

The platoon is ordered to occupy, prepare, and defend a battle position or sector as a separate unit or as part of a larger force. The enemy can attack in company-sized strength, either mounted or dismounted. Both friendly and enemy elements are supported by indirect fire and CAS.

TASK STANDARDS: (GO/NO GO) GO NOGO Miss

1. The platoon completes all designated preparations NLT the time specified in the order.	11	30	1
2. The platoon main body is not surprised by the enemy.	15	21	6
3. The platoon accomplishes its assigned task.	12	23	7
a. The platoon destroys (i.e., inflicts 30% casualties) blocks, delays for the specified time, and canalizes the enemy into the designated area.	7	21	14
b. The platoon denies or prevents penetration of the specified boundary or terrain	13	21	8

<sup>1</sup>Refers to not observed, not applicable, or missing. It does not reflect the 3 platoons missing from the data base.

Table A-1 Cont'd

	GO	NOGO	Miss
c. The platoon guards, protects, or overwatches a friendly unit (with no more than 10% casualties to the protected friendly unit from enemy in the platoon's area of responsibility).	6	16	20
4. The platoon sustains no more than 25% casualties.	15	21	6

SUBTASKS AND STANDARDS: (GO/NO GO)

	GO	NOGO	Miss
1. The platoon establishes hasty fighting positions.	18	20	4
1a. The platoon stops in covered and concealed positions. Maintenance requirements.	17	15	10
1b. The rifle teams dismount.	14	5	23
1c. Leaders, with security and commo, conduct a recon of the tentative position.	28	11	3
1d. Leaders designate sectors and general locations for OPs, M60s/SAWs, and Dragons.	20	5	17
2. Designated security or OP Teams move to assigned positions.	16	24	2
2a. OPs provide early warning and close-in security.	11	27	4
2b. Concealed routes are designated and to and from OPs.	11	26	5
2c. OPs offer cover and concealment for occupants.	13	22	7

Table A-1 Cont'd

	GO	NOGO	Miss
2d. OPs are operated in reliefs; a minimum of two soldiers are assigned to each relief.	8	27	7
2e. OPs have commo (wire if available) with the platoon CP.	12	24	6
3. Plt ldr assigns primary & alternate posns for each squad & sectors of fire for crew served weapons & Dragons.	11	28	3
4. Rifle teams & Dragon gunners move & establish hasty fighting posns in assigned sectors.	22	17	3
5. M60/SAW gunners & grenadiers move & establish hasty fighting positions in assigned sectors.	20	18	4
6. Individual soldiers prepare prone posns at least 18" deep. Soldiers make use of existing holes and ditches for positions.	15	22	5
7. Leaders check positions selected by platoon members.	24	13	5
7a. Positions provide cover and concealment.	15	22	5
7b. Posns provide obsvn fields of fire into assigned sector for a platoon deliberate defense.	12	24	6
8. The platoon halts in a covered & concealed area to the rear of the position.	18	20	4
9. The PSG sets up and checks security.	15	23	4

Table A-1 Cont'd

	GO	NOGO	Miss	
10. The platoon leader recons the battle position.	27	10	5	
10a. Plt ldr issues a contingency plan to the PSG before the recon party departs.	13	20	9	
10b. Plt ldr, FO, RATELO, squad ldrs & security element approach posn from rear & conduct recon.	20	16	6	
10c. The recon ensures the position is free of enemy, mines, and obstacles.	19	17	6	
10d. Plt tentative positions and fire plan are confirmed and modified.	20	17	5	
10e. Security elements establish local security during recon & battle position occupation.	11	28	3	
10f. There were 2 NOGOs in the data base for sts6. There is no subtask standard to match with these data.				
11. Plt ldr establishes task priorities based on METT-T.	12	27	2	n=41
12. Plt ldr assigns squad sectors and OP locations (OPs have wire comms if available).	22	19	1	
13. Plt ldr designates location for PEW system, chemical alarm, and the platoon CP.	19	19	4	
13a. The chemical alarm is emplaced within 5 minutes of occupying the battle position.	0	33	6	
13b. Early warning devices are emplaced before dark, if possible.	20	16	6	

Table A-1 Cont'd

	GO	NOGO	Miss	
14. Plt ldr selects initial M60, SAW, & crew-served weapons positions to cover likely avenues of approach.	29	11	2	
15. The platoon leader selects initial antiarmor weapons positions.	26	13	3	
15a. Selected positions cover likely mounted avenues of approach.	26	14	2	
15b. Selected positions maximize flank shots.	17	23	2	
15c. Selected positions provide long range shots and adequate standoff.	12	27	3	
16. Plt ldr returns to plt posn & controls movement of the plt to the battle position.	19	18	5	*
16a. The platoon moves on multiple routes, if possible.	10	18	14	
16b. Squads occupy designated sectors at the same time, if possible.	25	14	3	
17. Squad ldrs adjust initial posns for each vehicle, M60/SAW, individual, and crew served weapon.	19	20	3	*
18. The platoon leader coordinates fir direct and indirect fires.	22	18	2	*
18a. M60/SAW positions have interlocking fires across the platoon front.	11	28	3	

\* Leader task.

Table A-1 Cont'd

	GO	NOGO	Miss
18b. The platoon is tied in with adjacent platoons.	5	23	14
18c. Fires cover man-made and natural obstacles by designating PDFs, FPLs, and FPFs.	18	23	1
18d. Guides are provided for the covering force, if required.	3	9	30
19. Plt members begin preparation of fighting positions IAW the unit SOP.	21	18	3
19a. Local security is established.	16	25	1
19b. Claymore mines are emplaced.	21	19	2
19c. Physical recon of front of posn is conducted to become familiar with terrain and to locate dead space.	14	28	0
19d. Physical contact with adjacent is conducted and covered and concealed routes selected.	14	19	9
19e. Field of fire are cleared.	13	29	0
19f. Range cards are prepared and aiming stakes are emplaced.	16	26	0
19g. Fighting positions are dug.	32	10	0
19h. Overhead cover for fighting positions is constructed.	27	14	1
19i. Positions are camouflaged.	20	22	0

Table A-1 Cont'd

	GO	NOGO	Miss
19j. Ammo, food, and water are stockpiled or cached.	15	24	3
20. The RATELO installs a landline (hot loop).	16	25	1
20a. Wire is laid to each squad.	15	25	2
20b. Commo is established with the company.	32	9	1
20c. Commo checks are conducted to ensure that landlines are operational.	23	11	8
21. Plt emplaces obstacles IAW the Plt/Co obstacle plan (T&EO 7-3-1068, Construct Obstacles).	17	22	3
21a. Obstacles are covered by direct & indirect fire & are under friendly observation.	22	18	2
21b. Obstacles are concealed from enemy observation as much as possible.	18	21	3
21c. Obstacles are erected in an irregular pattern.	14	23	5
21d. Obstacles are employed in depth.	12	26	4
21e. Obstacles are coordinated with existing obstacles.	12	35	5
22. Plt ldr selects alternate and supplementary positions.	9	31	2

Table A-1 Cont'd

	GO	NOGO	Miss
22a. Primary posns are situated so that the unit/individual can fight to accomplish the msn.	13	28	1
22b. Alternate posns are situated so that a unit/individual can perform the task when the primary posn becomes untenable.	7	34	1
22c. Supplementary posns are situated so that a unit/individual can accomplish a task that can not be done from the primary or alternate positions.	7	34	1
23. The platoon prepares defensive positions.	19	20	3
23a. Fighting positions are constructed to provide:	6	14	22
23a1. Front, side, and rear protection.	15	27	0
23a2. Overhear cover (18" of dirt and/or logs).	22	20	0
23a3. Concealment from all angles.	6	36	0
23a4. Observation of sectors of fire.	15	27	0
23a5. Overlapping fields of fire with the adjacent positions.	17	25	0

Table A-1 Cont'd

	GO	NOGO	Miss	
23b. Fighting positions:	7	11	24	
23b1. Are armpit deep.	10	28	4	
23b2. Are shoulder wide.	20	20	2	
23b3. Include a grenade sump.	2	35	5	
23b4. Include aiming and limiting stakes.	9	32	5	
23b5. Have elbow, tripod, and bipod space or holes.	4	28	10	
23b6. Have water drainage.	2	31	9	
24. Plt ldr & FO update the fire plan.	15	24	3	*
24a. Enemy avenues of approach are included.	16	23	3	
24b. Known or likely enemy positions are included.	12	19	11	
24c. Final protective fires (if allocated) are included.	21	18	3	
25. Squad leaders prepare sector sketches & submit sketches to the platoon leader.	21	19	2	*
25a. Sector sketch shows main terrain features in squad's sector of fire & ranges to them.	16	25	1	

\* Leader task.

Table A-1 Cont'd

	GO	NOGO	Miss
25b. Sector sketch shows each primary fighting position.	24	17	1
25c. Sector sketch shows primary and secondary sectors of fire for each position.	11	29	2
25d. Sector sketch shows the type of weapon in each posn & fire control measures (FPF, PDF, FPL).	20	20	2
25e. Sector sketch shows OPs and the squad leader's position.	17	22	3
25f. Sector sketch shows dead space.	12	27	3
25g. Sector sketch shows obstacles.	16	24	2
25h. Sector sketch shows the direction of north.	13	25	4
26. The platoon leader prepares a platoon sector sketch.	20	20	2
26a. Sector sketch includes the platoon sector or engagement area.	21	19	2
26b. Squad primary, alternate, and supplementary positions and sectors of fire.	10	30	2
26c. Sector sketch includes Dragon & M60/SAW posns with primary sectors of fire, FPL/PDF/TRPs.	20	20	2
26d. Sector sketch includes OPs and patrol routes (if any).	9	28	5

\* Leader task.

Table A-1 Cont'd

	GO	NOGO	Miss	
26e. Sector sketch includes maximum engagement lines for primary weapon systems.	5	32	5	
26f. Sector sketch includes mines and obstacles.	13	26	3	
26g. Sector sketch includes indirect fire targets and FPFs (if allocated).	14	24	4	
26h. Sector sketch includes the direction of north.	17	23	2	
26i. Sector sketch includes unit designation up to company level.	15	25	2	
26j. Sector sketch includes the date/time group.	12	28	2	
26k. Sector sketch includes the platoon CP.	21	19	2	
26l. There was 1 GO in the data base for sts12. There is no subtask standard to match.				
27. Plt ldr forwards the sector sketch to the company commander & keeps a copy.	18	24	0	*
28. Plt conducts defensive preparations.	19	20	3	
28a. Rehearsals of mvt to alternate & supplementary posns are conducted as time allows.	4	37	1	
28b. Defensive positions are improved as time allows.	23	19	0	
29. Plt defends a battle position against a mounted assault.	11	12	19	+

\* Leader task.

+ Critical task.

Table A-1 Cont'd

	GO	NOGO	Miss
29a. OPs detect and report enemy elements.	11	16	15
29b. OPs withdraw on order or IAW the SOP to the platoon position.	6	13	23
29c. If the plt is in a hide posn, plt moves to & occupies the primary or supplemental posns that cover the enemy avenue of approach.	4	6	32
29d. Plt used covered & concealed routes to positions.	7	9	26
29e. Plt ldr calls for & engages enemy with supporting fires IAW Co OPORD/FRAGO.	9	13	20
29f. Plt initiates direct fire engagement of enemy IAW OPORD or FRAGO and the fire commands.	8	15	19
29g. Antiarmor weapons conduct initial engagement at the same time, if possible.	8	15	19
29h. Plt executes the obstacle plan IAW company OPORD/FRAGO.	12	14	16
29i. Plt increases intensity of fires as enemy elements close to within range of other wpns.	7	17	18
29j. Squads & individuals are repositioned to alternate/supplementary posns using covered & concealed routes, as needed.	3	21	18
29k. As posns receive return fire, soldiers move behind parapets & deliver flanking fires IAW the platoon fire plan.	5	15	22

Table A-1 Cont'd

	GO	NOGO	Miss	
29l. Plt ldr requests FPF from the supporting indirect fire units as enemy nears the FPL.	6	13	23	
29m. Plt uses small arms fire to engage exposed enemy armored vehicle crewmen & vehicle optics.	17	5	20	
29n. Plt uses Dragon, LAW, & M203 to engage assaulting vehicles by targeting vehicle flanks.	15	10	17	
30. Plt defends a battle position against a dismounted assault.	7	12	23	+
30a. Direct & supporting FPFs are initiated.	4	15	23	
30b. M60s/SAWs fire on interlocking grazing FPLs at a cyclic rate on the designated FPL.	3	17	22	
30c. Other weapons fire at a rapid rate on the designated PDF.	6	16	20	
31. Plt defends battle posn against enemy vehicles penetrating the fighting positions.	6	12	24	+
31a. The rear of assaulting vehicles is engaged.	7	11	24	
31b. Plt continues to engage follow on vehicles to protect personnel engaging initial assaulting vehicles.	9	10	23	
31c. Grenades are thrown/fired into vehicles from which enemy is dismounting.	3	5	34	
31d. M60s/SAWs are used to engage dismounting infantry as soon as rear doors or ramps open.	5	7	30	

+ Critical task.

Table A-1 Cont'd

31e. There are 2 NOGOs in the data base for sts5. There is no subtask standard to match.

32. Plt continues to defend until enemy is repelled or the plt is ordered to disengage.

GO	NOGO	Miss	
11	10	18	n=39

+ Critical task.

Table A-2

O/C Frequency Ratings of Task 611: Prepare for Combat  
(Platoon/Squad)

TASK TRAINING STATUS: (T, P, or U)	T	P	U	Miss <sup>1</sup>
	3	22	16	1

CONDITIONS: The platoon is ordered to conduct combat operations. The platoon has received a company warning order, operation order, or FRAGO.

TASK STANDARDS: (GO/NO GO)	GO	NOGO	Miss
1. Unit moves by the time specified in the order.	32	9	1
2. Unit has all weapons & equipment & complete basic load of supplies as specified by the leader.	33	9	0
3. Pre-mission PMCS is performed on all weapons and equipment.	21	17	4
4. All personnel can explain unit mission, the mission of their element, & their assigned tasks and duties for the mission.	17	25	0
5. Coordination with higher, adjacent, & supporting units is completed.	19	22	1
6. All attachments are received, briefed, and inspected.	25	10	7
7. Combat loads are tailored as directed by the leader.	35	5	2

<sup>1</sup>Refers to not observed, not applicable, or missing. It does not reflect those platoons missing from the data base.

Table A-2 Cont'd

SUBTASKS AND STANDARDS: (GO/NO GO)	GO	NOGO	Miss	
1. The platoon leader receives the mission (Step 1- TLP) from the company commander.	35	3	4	*
1a. Questions are clarified.	18	20	4	
1b. Coordination is conducted with company personnel, as needed.	28	11	3	
1c. There is 1 GO in the data base for sts3. There is no subtask standard to match.				
2. The platoon leader performs mission analysis.	21	18	3	*
2a. Mission and intent of Cdr two levels up is identified.	31	8	3	
2b. Mission and intent of the company commander is identified.	37	2	3	
2c. Specified, implied and mission-essential tasks are identified.	22	17	3	
2d. Constraints and limitations are identified.	20	18	4	
2e. The purpose of the mission is discerned.	27	12	3	
3. The platoon leader completes mission analysis.	21	18	3	++
3a. A restated mission statement containing plt's mission-essential & purpose is developed.	23	15	4	
3b. A tentative time schedule is developed.	23	17	2	
3d. There is 1 NOGO in the data base for sts4. There is no subtask standard to match.				

\* Leader task.

++ Critical leader task.

Table A-2 Cont'd

	GO	NOGO	Miss
4. Plt ldr issues a warning order to the PSG & squad ldrs (Step 2, TLP).	37	3	2
4a. Enough info is included for subordinate elements to prepare for the mission.	32	8	2
4b. Warning order is given immediately after being alerted for the mission.	30	9	3
4c. Movement instructions are included if movement is to be initiated before OPORD brief.	23	3	16
4d. Items not covered in the SOP are addressed.	18	16	8
4g. There is 1 GO in the data base for sts7. There is no subtask standard to match.			
5. Plt perform readiness, maintenance, & functional checks under leader supervision.	23	16	3
5a. Vehicles are checked.	0	0	42
5b. Weapons are checked.	24	13	5
5c. Night observation devices are checked.	27	11	4
5d. NBC equipment is checked.	17	13	12
5e. Any special equipment to be used for the mission is checked.	24	13	5
6. Vehicles are combat loaded IAW the SOP or warning order.	1	0	41

\* Leader task.

Table A-2 Cont'd

	GO	NOGO	Miss	
7. All personnel test-fire weapons, if the situation permits.	14	15	13	
8. Plt ldr makes a tentative plan (Step 3, TLP).	25	15	2	*
8a. Estimate of situation is used to analyze METT-T factors.	18	22	2	
8b. Courses of action are developed.	19	20	3	
8c. A recon plan is developed.	19	19	4	
9. Plt initiates movement (Step 4, TLP) as required for quartering party, selected elements, or the entire platoon (T&EO 7-3/4-1025, Move Tactically).	24	7	11	+
9a. Movement is based on instructions given in the warning order.	26	4	12	
9b. Movement is completed NLT the time specified in the warning order.	20	10	12	
10. The platoon conducts recon (Step 5, TLP).	21	8	13	
10a. Location, strength, disposition & activity, & terrain info is determined.	20	12	10	
10b. Intelligence needs from higher headquarters are collected.	13	16	13	
10c. Ldr's recon, patrols, or elements in contact are used to obtain info (T&EOs 7-3/4-1042, & 7-3/4-1034, Tasks 357, 358).	17	11	14	

\* Leader task.

+ Critical task.

Table A-2 Cont'd

	GO	NOGO	Miss
10d. Information from higher headquarters is requested.	13	15	14
11. Plt ldr completes plan (Step 6, TLP) based on METT-T, intel from recon, & Cdr's guidance.	22	16	4
11a. Clear expression of Plt ldr's & Co Cdr's intent is given, addressing mission-essential tasks & purpose of tasks.	20	20	2
11b. A scheme of maneuver is given that exploits enemy weaknesses & friendly strengths.	17	23	2
11c. Use of appropriate framework to synchronize the effort is addressed.	15	24	3
11d. Task organization, including all attachments & supporting elements, is effected.	33	5	4
11e. Specific tasks to all subelements are given.	24	16	2
11f. Each task given to a subelement has a purpose that relates to the overall task.	23	17	2
11g. Control measures are included.	16	24	2
11h. Fire support is included.	20	20	2
11i. Combat load guidance is addressed.	31	6	5
11j. Deception actions are addressed.	11	23	8
11k. There is 1 NOGO in the data base for sts11. There is no subtask standard match.			

\* Leader task.

Table A-2 Cont'd

	GO	NOGO	Miss
12. Plt ldr issues OPORD to subordinate leaders (Step 7, TLP).	31	8	3
12a. Sufficient planning and preparation time is given by observing the 1/3-2/3 rule.	13	26	3
12b. Any questions from subordinate leaders are clarified.	25	13	4
13. Platoon leader conducts coordination.	26	14	2
13a. CS assets are requested to assist the platoon.	25	10	7
13b. Coordination of plans & actions is conducted with higher, adjacent, & supporting units.	16	21	5
13c. Attachments are briefed on mission/intent, specific tasks, SOPs, plan, recent enemy and platoon actions.	19	14	9
13d. Attachments are inspected for mission readiness.	19	13	10
13e. Plt ldr or PSG link up with POCs from attached elements.	24	7	11
14. The platoon leader supervises mission preparation.	23	17	2
14a. Subordinate leaders conduct briefbacks of their plans to Plt ldr to ensure his intent will be accomplished.	23	17	2
14b. Key platoon actions are rehearsed as time allows.	13	27	2
14c. Elements prepare field expedient equipment needed for their tasks.	8	20	14

\* Leader task.

Table A-2 Cont'd

	GO	NOGO	Miss
14d. Key leaders supervise, inspect, conduct briefbacks, rehearse, and continue coordination.	13	27	2
15. The platoon plans sustainment of combat operations.	18	21	3
15a. Plt ldr & PSG analyze mission with input from NCOs and attachment leaders.	18	21	3
15b. Anticipated ammo, supply, and services requirements are determined.	22	15	5
15c. Guidance concerning soldier's loads is given & loads are redistributed accordingly.	23	12	7
15d. Transportation needs are determined & requested.	23	3	16
15e. PSG coordinates with Supply SGT or 1SG for supply techniques to support the tactical plan.	21	15	6
15f. Selected techniques provide adequate supplies when & where needed & don't compromise Plt.	19	8	15
15g. PSG requests, receives, and issues special equipment & supplies determined to be needed.	24	13	5
15h. Plt ldr establishes/executes a rest plan for all personnel based on SOP, msn, & orders.	23	14	5
16. Plt performs continuous recon during the operation.	6	27	9
16a. Enemy strength, location, activity, & equipment are identified on contact.	16	15	11
16b. Important aspects of terrain based on OCOKA are identified.	10	25	7

Table A-2 Cont'd

	GO	NOGO	Miss	
17. Plt monitors actions of higher, adjacent, and supporting units.	13	21	8	
17a. Plt ldr is informed of enemy contact (SALUTE).	20	11	11	
17b. Plt ldr is informed of friendly locations, actions, and movement.	19	18	5	
17c. Plt ldr is informed of calls for fire.	19	11	12	
17d. Plt ldr is informed of orders from higher headquarters to other units.	14	19	9	
18. Plt ldr issues orders or modifies original plan.	27	8	7	++
18a. Current plt mission is addressed.	25	9	8	
18b. Higher commander's intent is explained.	26	11	5	
18c. Enemy and friendly situations are described.	34	5	3	
18d. Terrain is explained in terms of modification/change.	23	16	3	
18e. Troops available is modified as needed.	25	9	8	
19. Plt ldr issues FRAGOs to the platoon and attached elements.	27	9	6	++
19a. Order contains situation, mission, element tasks, and, if needed, changes in task organization.	27	9	6	
19b. Order is received and acknowledged by all subordinate elements.	31	5	6	

++ Critical leader task.

Table A-2 Cont'd

	GO	NOGO	Miss
19c. FRAGO is based on changed situation or orders from higher headquarters.	28	5	9
20. The platoon reacts to orders from higher headquarters.	32	5	5
20a. Receipt is acknowledged IAW unit SOP.	28	7	7
20b. Changes in task organization are executed as required.	24	8	10
20c. Maneuver, fires, or other actions are initiated as directed.	24	11	7
20d. Execution of orders is reported to higher headquarters and adjacent units IAW SOP.	22	15	5
21. The platoon coordinates actions with friendly units during the operation.	13	24	5
21a. When plt changes actions or locations, it informs adjacent, higher, & supporting units.	14	18	10
21b. Plt HQs personnel can explain actions & locations of adjacent units.	14	22	6
21c. Info is requested from subordinates as needed.	26	11	5
22. Plt HQs reports combat critical info to higher, adjacent, and supporting units.	22	17	3
22a. Information is reported IAW SOP or as ordered.	21	15	6
22b. Enemy contact is reported using the SALUTE format.	20	17	5

+ Critical task.

Table A-2 Cont'd

	GO	NOGO	Miss
22c. Terrain information is reported.	19	19	4
22d. Changes in platoon actions from the plan are reported.	20	14	8
22e. Changes in friendly situation are reported.	20	14	8
22f. Initiation of actions by the platoon are reported.	27	9	6
22g. CS or CSS requirements for task execution are requested.	17	16	9
22h. Friendly info from other units that higher HQ cannot monitor is reported.	11	17	14
23. Plt HQs disseminates information to the platoon.	22	17	3
23a. All subordinate leaders are informed.	22	18	2
23b. Info is disseminated on enemy contact.	15	21	6
23c. Info is disseminated when adjacent unit actions, locations, or mvt affect the plt.	10	25	7
23d. Changes in plt situation or actions are disseminated.	20	18	4
23e. Company orders or situation changes are disseminated.	24	14	4
23f. Terrain information that effects the platoon is disseminated.	17	22	3
23g. Changes in CS or CSS that effect the platoon are disseminated.	18	18	6

APPENDIX B

FREQUENCY TABLES OF COMPANY TASKS:

DEFEND AND DEVELOP AND COMMUNICATE A PLAN

BASED ON THE MISSION

Table B-1

O/C Frequency Ratings of Task 86: Defend (Company)

TASK TRAINING STATUS: (T, P, or U)	T	P	U	Miss <sup>1</sup>
	0	1	14	0

CONDITIONS: The company is conducting combat operations. The company has received a task force FRAGO or OPORD to defend.

TASK STANDARDS: (GO/NO GO)	Go	NoGo	Miss
1. A sound tactical plan is prepared and issued which incorporates all specified and implied tasks IAW FM 101-5, Ch. 6 & 7.	4	11	0
2. The unit is task organized, equipped, supplied, rehearsed, and prepared to execute the mission at the time/place specified in the order.	3	12	0
3. The unit maintains security throughout the operation.	1	14	0
4. The unit does not sustain any casualties by friendly fire.	6	8	1
5. The unit does not sustain more than 2% Died of Wounds casualties due to improper treatment or medevac procedures.	5	9	1
6. The unit executes movement techniques IAW FM 7-70, FM 7-71, FM 7-10, and FM 7-20.	9	5	1
7. The unit sustains no more than thirty percent (30%) casualties during defend operations.	8	7	0

<sup>1</sup>Refers to not observed, not applicable, or missing. It does not reflect companies that may have been missing from the data base.

Table B-1 Cont'd

	Go	NoGo	Miss
8. The unit conducts consolidation/reorganization, completes clearing of assigned objective, establishes local security, preps for follow-on attacks, conducts resupply operations, evacuates casualties, EPW, and equipment, reconstitutes as necessary, and preps for follow-on mission(s).	6	8	1
9. The unit destroys, captures, or renders ineffective personnel or equipment IAW the commander's intent.	6	9	0

SUBTASKS AND STANDARDS: (GO/NO GO)

	Go	NoGo	Miss
1. Plan for the defense.	2	9	4
1a. Company planned employment of forward platoons.	7	7	1
1b. Company planned to designate a reserve force.	4	10	1
1c. Positioning of anti-armor /crew-served weapons was planned.	8	6	1
1d. A company fire support plan that included organic mortars was developed/disseminated.	10	5	0
1e. A countermobility plan that mines and obstacles was planned.	7	7	1
1f. Company planned sufficient security measures/deception to include use of OPs.	4	10	1
1g. Combat service support was adequately planned.	7	8	0

Table B-1 Cont'd

	Go	NoGo	Miss
1h. Extensive patrols during hours of limited visibility were planned.	3	11	1
1i. Priority of work was planned.	9	5	1
1j. The plan and intent of the defense are clear and support each other.	4	10	1
2. Prepare for the defense.	0	11	4
2a. Fields of fire were cleared and range cards prepared.	4	10	1
2b. Individual/anti-armor/crew-served weapon fighting positions were prepared.	5	9	1
2c. Wire communications were installed.	4	10	1
2d. Alternate and supplementary fighting positions are prepared.	1	13	1
2e. Sufficient ammunition, food water, and other supplies were stockpiled/cached.	5	9	1
2f. Trenches between positions were dug.	0	14	1
2g. Reconnaissance of the company's sector was conducted.	9	6	0
2h. Coordination with adjacent units was conducted.	8	7	0

Table B-1 Cont'd

	Go	NoGo	Miss
2i. Obstacles and minefields were emplaced prior to "Defend NLT" time.	5	9	1
2j. Patrols were executed to halt enemy infiltration.	2	12	1
2k. Individual, squad, and platoon positions are mutually supporting.	2	11	2
2l. Crew-served weapons are inspected.	4	9	2
2m. LP/OPs are placed and wired in a position that allows early warning.	0	14	1
2n. Armor/anti-armor systems are integrated into the defense.	3	11	1
2o. Mortars are positioned to cover the company sector with 2/3 of range fwd of sector.	12	3	0
2p. FPF is planned.	14	1	0
3. Execute the defense.	1	10	4
3a. LP/OPs are established and maintained.	4	10	1
3b. All around security is maintained.	2	12	1
3c. Positions are continuously improved.	10	4	1
3d. Enemy is located & identified & COAs evaluated prior to initiation of main defense.	3	11	1

Table B-1 Cont'd

	Go	NoGo	Miss
3e. Cdr decides to engage, allow enemy to bypass, or counterattack.	6	7	2
3f. Enemy is engaged at maximum effective range of available weapons.	1	12	2
3g. Obstacles slow/canalize enemy armor/forces into planned engagement areas.	4	10	1
3h. Weapons systems are oriented and emplaced to facilitate max destruction of enemy.	0	13	2
3i. Alternate/supplementary posns allow company to continue the defense if penetrated/flanked.	2	11	2
3j. Cdr identifies decisive point in battle & brings max combat power to bear on enemy.	1	12	2
3k. Local counterattacks are conducted to regain/re-establish defensive posn.	1	10	4
4. Consolidate/reorganize.	2	8	5
4a. Security is re-established.	6	7	2
4b. A SITREP is sent to battalion.	10	3	2
4c. WIA/KIA are treated and evacuated.	6	7	2
4d. Ammunition is redistributed.	9	1	5
4e. Resupply is conducted.	8	2	5

Table B-1 Cont'd

4f. EPWs are processed.

4g. Chain of command is re-established.

4h. Key weapon systems are manned.

Go	NoGo	Miss
3	1	11
10	1	4
9	4	2

Table B-2

O/C Frequency Ratings of Task 610: Develop & Communicate a Plan Based on the Mission (Company)

TASK TRAINING STATUS: (T, P, or U)	T	P	U	MISS <sup>1</sup>
	3	3	12	0

CONDITIONS: The company is provided a complete OPORD and required information necessary to support planning and a higher/adjacent/supporting headquarters with which to coordinate.

TASK STANDARDS: (GO/NO GO)	GO	NOGO	MISS
1. The company plan was doctrinally sound, followed the battalion commander's intent, made maximum effective use of time, was clearly understood by subordinate leaders, and would accomplish the assigned mission.	5	11	2
2. The commander issued a complete and comprehensive warning order within 15 minutes of receipt of the company warning order.	10	6	2
3. The commander planned for the use of time. A time schedule of critical events was developed, and the 1/3-2/3 rule was not violated.	8	9	1
5. Leaders recons were conducted to collect critical information.	6	10	2
6. The commander completes the estimate of the situation and selects a course of action.	12	5	1
7. The platoon leader prepared and OPORD IAW FM 101-5.	10	6	2

<sup>1</sup>Refers to not observed, not applicable, or missing. It does not reflect those companies missing from the data base.

Table B-2 Cont'd

SUBTASKS AND STANDARDS: (GO/NO GO)

	GO	NOGO	MISS
1. Issue a warning order.	11	4	3
1a. Was the warning order issued w/in 15 minutes of receipt of the Bn warning order?	12	6	0
1b. Did all key/subordinate leaders receive the WO?	14	4	0
1c. Did the company warning order contain information about:	8	5	5
1c1. Enemy/friendly situation, events, probable msns, tasks, & operations?	13	4	1
1c2. Attachments and detachments?	15	3	0
1c3. Company mission?	17	1	0
1c4. Uniform and equipment that all soldiers will have for this mission?	13	5	0
1c5. Earliest time of move?	13	5	0
1c6. Special weapons, ammunition & equipment?	13	5	0
1c7. Nature and time of the operation?	16	2	0
1c8. Time, place, & uniform for the order?	13	5	0
1c9. Inspection times & items to be inspected?	9	9	0

Table B-2 Cont'd

	GO	NOGO	MISS
1c10. Rehearsal times & actions to be rehearsed?	10	8	0
1c11. Special instructions for subordinate ldrs, OPORD preparers?	11	7	0
1c12. Admin/log information?	9	9	0
2. Commander receives and analyzes the mission.	11	6	1
2a. Were the following aspects of the Bn order understood?	6	7	5
2a1. The mission?	14	4	0
2a2. Guidance?	12	6	0
2a3. Brigade and battalion commander's intent?	14	4	0
2a4. The purpose of the mission?	12	6	0
2a5. Specified and implied tasks?	11	7	0
2a6. Doctrinal aspects of mission?	10	8	0
2a7. Mission essential tasks?	13	5	0
2a8. Constraints and limitations?	13	5	0
2b. Did the commander restate the mission?	14	3	1

Table B-2 Cont'd

	GO	NOGO	MISS	
3. Commander plans the use of available time.	8	10	0	
3a. Did commander schedule critical events?	8	10	0	
3b. Was the 1/3-2/3 rule followed?	13	5	0	
4. Make a tentative plan.	4	11	2	n=17
4a. Did the Plt ldr properly estimate the situation using METT-T?	6	11	0	n=17
4b. Were terrain & weather considered (OCOKA)?	9	8	0	n=17
4c. Was the enemy situation and most probable COA considered?	8	9	0	n=17
4d. Was the friendly situation considered?	14	3	0	n=17
4e. Did the commander develop & analyze a COA?	10	6	1	n=17
4f. Did the cdr make a decision that produced a tentative plan & focused the recon?	7	9	1	n=17
5. The cdr issues instructions to initiate preparation activities.	13	4	1	
5a. Were instructions issued in a timely manner?	11	6	1	
5b. Did all appropriate elements receive instructions?	12	5	1	

Table B-2 Cont'd

	GO	NOGO	MISS
6. Conduct reconnaissance and gather information.	8	10	0
6a. Did the commander direct the collection of critical information?	10	8	0
6b. Was the critical information collected & used to confirm or deny the plan?	5	13	0
7. The commander finalizes the plan & prepares the OPORD.	8	9	1
7a. Did the OPORD support the commander's intent?	9	8	1
7b. Did the OPORD recognize the subordinate leader's initiative/prerogatives?	14	4	0
7c. Were all subordinate leaders present for the order?	14	4	0
7d. Did the task organization:	11	4	3
7d1. Support the scheme of maneuver?	13	5	0
7d2. Define command relationships?	14	4	0
7e. Did the OPORD contain:	7	4	7
7e1. Enemy situation (strength & disposition, locations & most probable COA)?	15	3	0
7e2. Friendly situation (units supporting & supported, adjacent & reserve)?	15	3	0

+ Critical task

Table B-2 Cont'd

	GO	NOGO	MISS
7e3. Mission (includes who, what, when, where, why & how)?	12	6	0
7e4. Clear & concise statement of the Plt ldr's intent?	11	7	0
7e5. Concept of the operation (main & supporting effort & scheme of maneuver)?	7	11	0
7e6. Fire support (priority, targets)?	9	0	0
7e7. Intelligence & electronic warfare (if required)?	9	5	4
7e8. MCMS operations & overlay (if required)	3	11	4
7e9. Subordinate unit instructions?	11	7	0
7e10. Coordinating instructions?	8	10	0
7e11. CSS instructions (Cmbt & Fld trns, MEDEVAC, EPW, supply status)?	7	11	0
7e10. Command & signal (locations of CPs & leaders, commo instr)?	8	10	0
7f. Was an operations overlay or sketch used to graphically portray the OPORD?	11	7	0
7g. Did the overlay contain sufficient control measures & marginal information?	5	13	0
7h. Were control measures accurate & graphics correct?	10	8	0