AD-A082 955 HUMAN RESOURCES RESEARCH ORGANIZATION ALEXANDRIA VA F/G 5/9
TASK ANALYSES OF THREE SELECTED WEAPONS SYSTEMS,(U)
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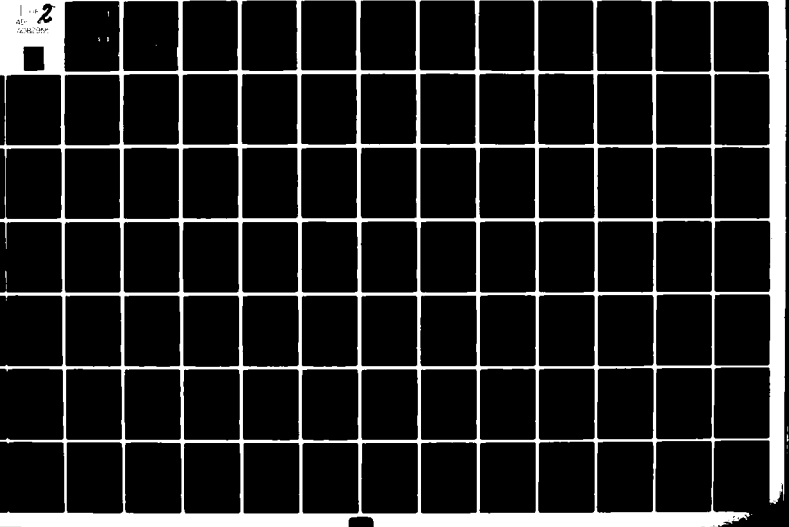

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Army Research Institute for the Behavioral and Social Sciences
Research Memorandum 76-20
Oct. 1976

DOCUMENT IDENTIFICATION

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Theodore R. Powers and Michael R. McCluskey
Human Resources Research Organization

UNIT TRAINING AND EVALUATION SYSTEMS TECHNICAL AREA

U. S. Army

Research Institute for the Behavioral and Social Sciences

October 1976

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Army Project Number
2Q762717A722

Unit Standards and
Performance Evaluation
Contract DAHC 19-73-C-0057

Research Memorandum 76-20

# TASK ANALYSES OF THREE SELECTED WEAPONS SYSTEMS

Theodore R. Powers and Michael R. McCluskey
Human Resources Research Organization

Angelo Mirabella, Work Unit Leader

Submitted by:
Frank J. Harris, Chief
UNIT TRAINING AND EVALUATION SYSTEMS TECHNICAL AREA

October 1976

Approved by:

Joseph Zeidner, Director
Organizations and Systems
Research Laboratory

J. E. Uhlaner, Technical Director
U.S. Army Research Institute for
the Behavioral and Social Sciences

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TASK ANALYSES OF THREE SELECTED WEAPONS SYSTEMS

CONTENTS

# TASK ANALYSES OF THREE SELECTED WEAPONS SYSTEMS

## INTRODUCTION

The research reported here is part of a broader program on simulation conducted by the Unit Training and Evaluation Systems Technical Area of the Army Research Institute for the Behavioral and Social Sciences (ARI). Training simulators reduce demands on limited resources and promise greater efficiency in both training and testing. However, no experimental evidence had compared performance resulting from simulator vs. live-fire training. The overall objective of Project DRAGON (LIVEFIRE) was to determine the contribution of live firing of large caliber weapons to weapons proficiency. To achieve this objective, three separate but sequentially linked tasks were accomplished by ARI and the Human Resources Research Organization (HumRRO).

The first task analyzed present weapons training and training devices in the context of the total Army training system, through review of training documentation, relevant research, military literature, observation of training practices, and discussions with cognizant military personnel (McCluskey, Haggard, and Powers, 1976). Topics in the report included instructional content, instructional techniques, weapons training devices (simulators), training management, and resources required to support training.

The second task was to conduct task analyses to identify the critical performance requirements for three selected weapons systems, and to identify the commonalities and differences in tasks within the three major weapons systems and other weapons of a similar but somewhat different nature. The three weapons used in Task 2 were:

(1) The M60A1 Tank. This tank is armed with a 105mm main gun and is currently the main battle tank for the U.S. Army. Other weapons in the same general family are the newer M60A2 Tank and the M551 Armor Reconnaissance/Airborne Assault Vehicle (AR/AAV).

(2) The 155mm Howitzer--Self Propelled (SP). This is one of the principal artillery supporting weapons for the combat arms. Other weapons in the same general family are the 105mm Howitzer (Towed), the 155mm Howitzer (Towed), and the 8-Inch Howitzer (SP).

(3) The 81mm Mortar. This is the principal supporting mortar used at platoon and company level. The only other weapon currently available in this family is the 4.2-Inch Mortar.

This report discusses the results of the Task 2 research. Topics include identification of mission profiles, development of task inventories, administration of the task inventories to job incumbents, and analyses of the results.

The third and final task was to use the collected information to develop and conduct two field exercises to determine the contribution of live firing to weapons proficiency. The weapons used in Task 3 were the M60A1 Tank and the 155mm Howitzer (SP), and the results of the field tests have been reported by Powers et al. (1975).

## RESEARCH APPROACH

The first step in Task 2 was to identify information about the three major weapons systems that were the focus of this phase of the research. In this systems analysis approach all component parts of the system must be identified. The behavior of individuals using weapons is a joint function of the specific weapon system, the goals (missions) of the system, and the environment in which it is used. The first step in identifying relevant tasks was, therefore, a comprehensive identification of the purposes for which a weapon may be used, weapon characteristics, and environmental characteristics.

Using this information from the systems analyses, the next step was to develop task inventories for the three selected weapons systems. Because of their previous research and expertise in certain areas, HumRRO Division No. 2, at Fort Knox, Kentucky, developed the task inventories for all jobs of the M60A1 Tank. HumRRO Division No. 4, at Fort Benning, Georgia, developed the task inventories for the 81mm Mortar and the 155mm Howitzer (SP) with the aid of several trips made to the Artillery School at Fort Sill to gather information, although HumRRO had previous experience with this weapon (McCluskey, Jacobs, and Cleary, 1974).

These task inventories were then given to a number of job incumbents at various locations and were also administered to job incumbents for the six peripheral weapons systems. This was done to identify commonalities and differences within and among similar and different type weapons.

The resulting data are extensive and complex. These data are included in tables in this report and the appendixes. Task inventory data were reduced by computer, using the CODAP 360 JOBDEC method of task analysis. Computer printouts in the appendixes list each individual task, in rank order, for each critical job, in each of the weapons systems.

## IDENTIFICATION OF MISSION PROFILES AND RELATED INFORMATION

As the first step, system characteristics were delineated. This ranged from such basic data as the identification of number of personnel

and type of job for each man in a weapons system to significantly more complex factors such as the types of fire missions that would normally be appropriate for each weapon.

The purpose was to identify the general activities required for effective employment of the weapon, and the significant factors within the total system that may impact upon these activities. Information was obtained on:

(1) Identification of typical fire missions.

(2) Specification of the firing environments by type of mission.

(3) Specification of the major system components (personnel, firing techniques, specific equipment), including interaction between other major system components (e.g., for Artillery, Forward Observers, and Fire Direction Centers).

(4) Identification of fire mission profiles which state general job functions for each type of typical mission.

Documentary sources such as Field Manuals, Technical Manuals and Service School publications were surveyed, to update and verify the extensive knowledge and experience in the weapons area that existed within the HumRRO research team. Discussions with Service School personnel then verified the information that had been collected. For Infantry and Armor weapons, direct coordination was made by the HumRRO Divisions located near the Schools. For Artillery, information was gathered on a trip to Fort Sill.

Field experience data obtained in discussions with Service School personnel were compared to current doctrine to establish and assess the practical implications of live firing with large caliber weapons. Field experience data were also obtained by refining information that had been previously collected by HumRRO Work Unit ACTION which had collected combat information data on weapon use by making on-site visits to units in Vietnam (Magner, 1967).

This mission profile information was analyzed and stored for eventual use in the development of task inventories. Appendix A shows an example of the types of information identified for one weapons system.

The systems analysis laid a sound basis for the development of task inventories. For example, mission profiles for the 155mm Howitzer (SP) had identified significant task differences that depended on whether the gun was firing direct or indirect fire. This finding required the development of task inventories that separated the tasks into these two categories. Without this prior information, a single task inventory would probably have been developed that could have caused confusion among the job incumbents.

Additionally, the use of mission profiles enabled the research team to identify major potential problem areas. For example, the systems analysis clearly indicated that the Forward Observer (if used) and the Fire Direction Center were significant variables in the accurate firing of large caliber Artillery weapons. Thus, those variables would have to be held constant, or controlled in some way, if the weapons proficiency of individual crews was to be established. Awareness of this potential problem area enabled the research team to design the Artillery Field Test plan accordingly. Other types of information collected were used in equally significant ways, as the research team began the task analysis.

## DEVELOPMENT OF TASK INVENTORIES

The mission analyses had identified all jobs and positions within the three selected weapons systems and specified the jobs critical to live firing within these systems. Critical jobs were defined as those performed by personnel directly adjacent to, and an integral part of, the sighting, loading, aiming, and firing of a weapon. The jobs for each weapons system are shown in Table 1.

For critical jobs, an in-depth job analysis was performed. Lengthy task inventories (up to 54 tasks) were developed for each position, with each task being written at a relatively specific level. For peripheral jobs, smaller inventories were developed (up to 20 tasks) with the individual tasks described more generally. In all cases, task inventories were limited to the weapon's live-firing activities.

Task inventories for all jobs, peripheral or critical, were developed in the following sequence. First, tentative draft lists were developed, using the following sources of information:

1. Job information collected during the development of mission profiles.

2. Army training documents such as Field Manuals, Technical Manuals, and Service School (Armor School, Artillery School, Infantry School) publications.

3. Expert opinion of Service School committee members.

4. The results of previous research conducted on these weapons.

5. The expertise of HumRRO personnel (including many retired Army officers) who have worked on previous weapons projects.

Table 1

CREW MEMBERS FOR THREE WEAPONS SYSTEMS

System: M60A1 Tank

| Critical Jobs | Peripheral Jobs |
|---|---|
| Tank Commander | Driver |
| Gunner | |
| Loader | |

System: 155mm Howitzer (SP)

| Critical Jobs | Peripheral Jobs |
|---|---|
| Chief of Section | Cannoneers 2, 3, 4, 5, and 6 |
| Gunner | Driver |
| Assistant Gunner | |
| No. 1 Cannoneer | |

System: 81mm Mortar

| Critical Jobs | Peripheral Jobs |
|---|---|
| Squad Leader | 2nd Ammunition Handler |
| Gunner | |
| Assistant Gunner | |
| 1st Ammunition Handler | |

These draft inventories were informally reviewed by current or former job incumbents, or by experts in the pertinent area. In most cases, these individuals were with the Combat Arms Training Board, 197th Infantry Brigade, and the Infantry School at Fort Benning, and the 194th Armor Brigade and the Armor School at Fort Knox.

The draft inventories were revised to reflect comments received, and were then given a pilot test by having a limited number of job incumbents for each position complete the forms. These personnel were from various Armor units at Fort Knox, and from Infantry and Artillery units at Fort Benning. Based on the results of the pilot test, final inventories were developed. An example of these inventories is shown in Appendix B.

The format of all inventories was exactly the same. Only the task content differs as required by the job or weapons system. The response scale is a modification of the one originally developed by Hemphill (1959) and later used extensively by the U.S. Air Force in a number of job surveys (Morsh, 1963; Morsh and Archer, 1967). HumRRO has successfully used this scale in many recent task analysis projects, including the revision of the curriculum of the Coast Guard Academy (Powers et al., 1974). The scale is shown in Table 2.

Table 2

RESPONSE SCALE FOR TASK ANALYSIS

| Alternative | Value |
|---|---|
| (Incumbent marks a line through the task to indicate that the task is <u>not</u> a part of his job.) | (0) |
| INSIGNIFICANT part of my job | 1 |
| SOMEWHAT SIGNIFICANT part of my job | 2 |
| MODERATELY SIGNIFICANT part of my job | 3 |
| SIGNIFICANT part of my job | 4 |
| HIGHLY SIGNIFICANT part of my job | 5 |

Job incumbents were instructed to read each task on a list. If they never were responsible for a particular task in their current duties, they were instructed to draw a line through the task; the task would be scored as a zero. If the respondent did accomplish a particular task, they responded appropriately, using the scale shown in Table 2. The use of a single response scale combines task attributes (such as criticality, time spent, and difficulty) and allows tasks to be ordered as to job importance along a single dimension.

## ADMINISTRATION OF TASK INVENTORIES

ARI and HumRRO had originally planned that only troop units in the continental U.S. (CONUS) would be surveyed during this project. However, although adequate numbers of Armor and Artillery crews were available within CONUS, there was a shortage of 81mm Mortar crews. Therefore, the CONUS surveys of Armor and Artillery crews were done by HumRRO personnel, while ARI arranged to gather mortar crew data in Europe. The jobs, number of personnel surveyed, unit, and location are shown in Table 3.

In addition to the task analysis to be used in the later field test, a survey of "commonalities and differences" had been requested for common and different weapons within a particular weapons system. A practical difficulty arose during this specific phase because the Army reduced the number of weapons within systems. For example, the 175mm Howitzer (SP) is being phased out of the Artillery inventory. This reduction limited the number of weapons available for survey.

A corollary problem appeared in the Armor portion of the survey, where the M60A1 is the main battle tank. A new tank, the M60A2, is coming into the inventory and thus could be used as the common weapons system; a new AR/AAV, the M551, was available for the different weapons system. However, since both the M60A2 and the M551 are relatively new systems, very few experienced crews were available to the research staff. The common and different weapons, units surveyed, jobs, and number of personnel are shown in Table 4.

## ANALYSIS OF THE RESULTS

### DESCRIPTIVE STATISTICS

Appendix C presents descriptive statistics for personnel participating in the task analyses. Table C-1 shows the number of personnel, by rank, in each of the three major weapons systems. Table C-2 shows the number of personnel, by months of duty, in each weapons system, and Table C-3 shows the amount of combat for personnel in each weapons system. M60A1 personnel seem to be generally higher in rank, have more experience in their jobs, and have more combat experience than personnel in the other two systems.

Table 3

PERSONNEL USED IN TASK ANALYSES

| Location | Units | Jobs | No. Surveyed |
|---|---|---|---|
| | | M60A1 Tank | |
| Fort Knox | 194th Armor Brigade | Tank Commander | 44 |
| | Armor School | Gunner | 44 |
| | | Loader | 44 |
| | | Driver | 19 |
| | | 155mm Howitzer (SP) | |
| Fort Hood | 1st Cavalry Div. | Chief of Section | 33 |
| | 2nd Armored Div. | Gunner | 29 |
| Fort Benning | 197th Infantry Brigade | Assistant Gunner | 23 |
| | | No. 1 Cannoneer | 24 |
| | | Group - Cannoneers 2-6 and Driver | 40 |
| | | 81mm Mortar | |
| Europe | 1st Armored Div. | Squad Leader | 37 |
| | 1st Infantry Div. (FWD) | Gunner | 43 |
| | 3rd Infantry Div. | Assistant Gunner | 19 |
| | | 1st Ammunition Handler | 5 |
| | | 2nd Ammunition Handler | 16 |
| Fort Benning | 197th Infantry Brigade | Squad Leader | 8 |
| | | Gunner | 6 |
| | | Assistant Gunner | 10 |
| | | 1st Ammunition Handler | 2 |
| | | 2nd Ammunition Handler | 0 |

Table 4

COMMON AND DIFFERENT WEAPONS SYSTEMS

| Location | Units | Jobs | No. Surveyed |
|---|---|---|---|
| | Reference system: M60A1 Tank | | |
| Common System: M60A1 Tank | | | |
| Fort Knox | 194th Armor Brigade | Tank Commander | 5 |
| | | Gunner | 5 |
| | | Loader | 5 |
| Different System: M 1 AR/AAV | | | |
| Fort Knox | 194th Armor Brigade | Commander | 5 |
| | | Gunner | 3 |
| | | Loader | 3 |
| | | Driver | 3 |
| | Reference system: 105 mm Howitzer SP | | |
| Common System: 105 mm Howitzer Towed | | | |
| Fort Hood | 1st Cavalry Div. | Chief of Section | 4 |
| | 2nd Armored Div. | Gunner | 4 |
| | | Assistant Gunner | 4 |
| | | No. 2 Cannoneer | 4 |
| | | Group - Cannoneers - and Driver | 16 |
| Different System: 155-Inch Howitzer SP | | | |
| Fort Hood | 1st Cavalry Div | Chief of Section | 4 |
| | 2nd Infantry Div | Gunner | 5 |
| | | Assistant Gunner | 3 |
| | | No. 1 Cannoneer | 4 |
| | | Group - Cannoneers - and Driver | 10 |
| Different System: 105mm Howitzer Towed | | | |
| Fort Benning | 197th Infantry Brigade | Chief of Section | 6 |
| | 1st Cavalry Div | Gunner | 7 |
| | 2nd Armored Div | Assistant Gunner | 5 |
| | | No. 1 Cannoneer | 6 |
| | | No. 2 Cannoneer | 7 |
| | Reference system: 81mm Mortar | | |
| Common System: 4.2-Inch Mortar | | | |
| Fort Benning | 197th Infantry Brigade | Squad Leader | 10 |
| | | Gunner | 7 |
| | | Assistant Gunner | 2 |
| | | 1st Ammunition Handler | 0 |
| | | 2nd Ammunition Handler | 5 |
| Different System: None Available | | | |

## TASK ANALYSES OF THREE WEAPONS SYSTEMS

Appendix D presents the detailed results of the task analyses of the M60A1 Tank, the 155mm Howitzer (SP), and the 81mm Mortar. These data were analyzed using the CODAP 360 JOBDEC method of data analysis originally developed by the U.S. Air Force (Christal, 1970). JOBDEC develops several types of information, such as the percentage of respondents performing a given task and the percentage of the job that is encompassed by any given task. Primarily, the JOBDEC method of analysis is a mathematical/statistical tool for ranking the tasks comprising a job, from the most important tasks to the least important.

Thus, to interpret the task inventories in Appendices D and E, it is only necessary to read from top to bottom (task order is indicated by the numbers in the right hand column) to determine which tasks the respondents consider to be most important (the top third of an inventory), of intermediate importance (the middle third of an inventory), and least important (the bottom third of an inventory).

Information of this type is often used by curriculum planners to identify the tasks that should be emphasized the most in a program of instruction (usually the highest ranked ones) and which tasks need not be emphasized (usually the lowest ranked ones). The ranked task inventories are used to directly support the Task 3 field tests.

## DETERMINATION OF COMMONALITIES AND DIFFERENCES AMONG WEAPONS SYSTEMS

Some of the limitations of determining commonalities and differences for these particular weapons systems have been discussed. When the results of this phase were obtained, other problems were identified. For example, there was little difference among some of the jobs in the systems, but great differences among others. Thus, the observations presented here are not comparisions of the various weapons, per se, but rather comparisons of specific jobs across weapons systems.

Appendix E presents the detailed results of the task analyses of the M60A2 Tank, M551 AR/AAV, 105mm Howitzer (Towed), 8-Inch Howitzer (SP), 155mm Howitzer (Towed), and the 4.2-Inch Mortar. These data were also analyzed using the CODAP 360 JOBDEC method of computer analysis. Thus, these results can be interpreted in the same manner as those in Appendix D if task ranking is the important variable.

If determining commonalities and differences across jobs and weapons is important, specific comparisons must be made between lists. This was accomplished by arbitrarily using the top one-third of the tasks on each list (a commonly used cut-off point). With longer lists and larger numbers of respondents, a more refined breakout would have been possible. However, given the available data, this is an appropriate analysis procedure. Each top third of a list was then compared with each top third of each other list, for all weapons within the general weapons system. This was accomplished for each critical position. The percent

of overlap between task lists (positions) was then computed; the results are shown in Table 5.

To further identify the specific tasks that are "common," an asterisk has been placed beside certain tasks in Appendix D, indicating that the task is common to all weapons within one of the three systems. Contrary to the results presented in Table 5, relatively few tasks are common across all weapons in a system. Tasks not marked with an asterisk are, of course, not common to all weapons.

Commonality, as used here, means appearance in the top one-third of a task list for each of several positions. Since the research procedure was to use exactly the same task inventories for all weapons within a particular system, a specific task will always appear somewhere on all task lists. The relative positions of these tasks on the lists is of critical importance for this study and is the basis for determination of "commonality."

## DISCUSSION

### ASK ANALYSES OF THREE WEAPONS SYSTEMS

The task analyses of the M60A1 Tank, the 155mm Howitzer (SP), and the 81mm Mortar give valuable and necessary information. Since this information was gathered directly from job incumbents, it presents an accurate picture of procedures currently in use in many Army units. The components of each system were identified, and, by assessing the results of the analysis for each job, an excellent picture of job requirements was obtained. Although the research team had extensive experience with the Tank and Infantry systems, the Artillery system was relatively unfamiliar. Thus, the task lists were used as a detailed orientation on a particular weapons system.

The task lists were used to support work on the final phase of the projects, the field tests involving two of the three weapons systems--the M60A1 Tank and the 155mm Howitzer (SP)--in the conduct of the live-firing exercises. The task lists for these two weapons systems have been extensively reviewed, and various types of checklists and safety information have been developed from them. For example, by identifying which major tasks were ranked by the job incumbents as most important, Procedural Checklists have been developed for evaluators to use during live-firing exercises (e.g., Chief of Section--Checks position of replenisher tape indicator and recuperator).

Safety Checklists have also been developed from the task lists (e.g., Chief of Section--Repeats fire commands to keep crew informed of status of action). These checklists are also used by evaluators in the field study and may provide valuable information. During the first two phases of this study, troop commanders often commented that if troops were not accustomed to handling live ammunition, safety habits would be one of the first behavior patterns to degrade to a less than optimal level.

Table 5

COMMONALITIES AND DIFFERENCES WITHIN WEAPONS SYSTEMS

| Job | Overlap | Overlap | Overlap |
|---|---|---|---|
| Reference Weapon 155mm Howitzer (SP) | 155mm How (Towed) | 8-in How (SP) | 105mm How (Towed) |
| Chief of Section | 64% | 55% | 45% |
| Gunner | 69% | 46% | 54% |
| Assistant Gunner | 44% | 67% | 56% |
| No. 1 Cannoneer | 33% | 33% | 33% |
| Reference Weapon M60A1 Tank | M60A2 | M551 | |
| Tank Commander | 69% | 69% | |
| Gunner | 42% | 67% | |
| Loader | 27% | 45% | |
| Reference Weapon 81mm Mortar | 4.2-in Mortar | | |
| Squad Leader | (Task inventory too small to make meaningful comparison) | | |
| Gunner | 73% | | |
| Assistant Gunner | 40% | | |
| 1st Ammunition Handler | (No incumbents available) | | |

Finally, by establishing which crew member is responsible for a particular action, proper team cooperation can be assessed. Here a difference may exist between the weapons systems. The Tank System has a crew of four, only three of whom are directly involved in the firing. The Artillery System has a large crew of 10, with possibly nine of them directly involved in sustained firing although only four are in the turret at any one time. Thus, there may be hidden but inherent differences between these two weapons systems.

This task analysis information may interest the Service Schools that support the particular weapons systems. For instance, curriculum planners often use information of this type in curriculum development. The information in Appendix D might interest appropriate Service School personnel.

## ASSESSMENT OF COMMONALITIES AND DIFFERENCES AMONG WEAPONS SYSTEMS

This phase of the research was beset with many practical problems, not all of which were overcome. The major problem was that a relatively small number of crews were available for assessment for some of the peripheral weapons systems (e.g., M60A2 Tank). Thus, the results in this area should be considered tentative until substantiated by additional research.

Table 5 shows that there is significant task overlap for some jobs in each of the systems. Often, though not always, those jobs that are more leader oriented (e.g., Tank Commander or Chief of Section) seem to have greater overlap than those jobs that are more technically based (e.g., Loader or No. 1 Cannoneer). Logically, leadership skills (e.g., Designates specific targets) maybe more general in nature than specific technical skills (e.g., Installs coaxial machinegun) which may apply only to a particular type of weapon.

Table 5 also indicates that, for the Artillery System, the 155mm Howitzer (SP) is more similar to the 155mm Howitzer (Towed) than it is to the 8-Inch Howitzer (SP) or 105mm Howitzer (Towed). This is in the expected direction. The 81mm Mortar seems to be similar to the only other mortar available for comparison. However, the comparison of the three tanks does not show as clear a picture. The small number of tank crews for the M60A2 and M551 may have significantly limited these specific data.

## SUMMARY

Task inventories were developed for the M60A1 Tank, the 155mm Howitzer (SP), and the 81mm Mortar and were used with six comparable weapons systems. All task inventories were administered to job incumbents, and the results of the three major task analyses were used in direct support of the final phase of this project. A comparison of the three major systems with the six comparison systems identified commonalities and differences in task requirements for critical crew members across systems and found that leader positions have more generalizable skills across systems than do the more technical crew jobs.

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## APPENDIXES

APPENDIX A MISSION PROFILE INFORMATION FOR THE M60A1 TANK

FIRE MISSION ANALYSIS (TANK COMBAT, FULL TRACKED, 105MM GUN, M60A1)

1. Description and purposes of the weapons system: A heavy fully armored combat vehicle providing mobile fire power and crew protection for offensive combat armed with one 105mm gun, one cal .50 machinegun, and one cal .30 machinegun. Its purpose is:

a. To destroy targets

(1) Hard targets -- enemy armor

(2) Soft targets -- enemy wheel and other unarmored vehicles

(3) Troops -- individuals and those manning crew-served weapons

b. Defend or protect an area or position.

Environments:

a. Weather. The primary effects of weather on the operation of the M60A1 Tank are visibility and trafficability. The basic meteorological elements affecting operations are wind (speed and direction), temperature, humidity, cloud cover, precipitation, and atmospheric stability (inversion, lapse, and neutral conditions). In planning of operations with the M60A1 Tank, adverse weather conditions should be considered; often the success gained during unfavorable weather offsets the limitations and difficulties imposed by soil trafficability and slow rate of movement.

(1) Day: In clear weather the M60A1 Tank can successfully engage targets out to 2500-3000 meters, limited by the capability of the crew.

(2) Night: Night vision devices, both white and pink light mounted on the tank, permit engagement of targets.

(3) Rain, fog, snow and other forms of precipitation may limit the visibility of the crew and thus influence the effectiveness to engage targets under those conditions.

b. Terrain. The M60A1 Tank has good off-road trafficability and will cross most terrain that will support the 53-ton vehicle where no major obstacles exist. Its ground pressure is 11.1 PSI.

(1) Trafficability: It can travel up to 30 MPH on improved roads and has a cruising range of 160 miles. The vehicle will ford streams 48 inches deep, without the addition of fording kits. With the addition of fording kits, streams up to 162 inches may be forded if the stream bed is solid.

(2) Obstacles: The tank will climb vertical obstacles 36 inches high and will span a ditch 102 inches wide.

c. Enemy. The enemy capability to counter the employment of the M60A1 is of vital concern to the tank unit leader.

(1) Acquisition: In addition to the usual ground means of target acquisition available to the enemy, the M60A1 Tank is a high-priority target for enemy tactical air forces.

(2) Threat: In order to counter the threat, the cal .50 machinegun mounted on the tank and Red-Eye air defense teams provided for the tank company protection should be utilized. All forms of deception, cover, concealment, dispersion, and particularly frequent displacement of the tank are important.

(3) Intensity: Intensity of the enemy threat to the tank is determined by the number and type of weapons in possession of, and available to, the enemy. Characteristics of enemy weapons, such as range, rate of fire, mobility, and effectiveness of enemy weapons against the M60A1 Tank are of great importance to the tank commander.

3. Behavior of operating personnel of the M60A1 Tank.

(1) Crew: The tank crew must accept being separated from other friendly units. Maintenance and supply for both personnel and equipment assume major proportions in tank warfare. Although the most striking features of the M60A1 Tank are its powerful weapons and its mobility and shock effect, the successful employment of these material assets in combat depends ultimately on the courage, intelligence, and professional competence of the crew.

(2) Individual. The individual soldier of a tank crew, although proficient in his crew duty, must also be indoctrinated with the spirit of the offensive. His thinking must be geared to the speed and violence of tank warfare.

(3) Local environment: The crew must be trained to operate deep in hostile territory, and to recognize that the presence of the enemy to the front, flanks, and rear is a condition to be expected.

4. Pre-combat checks.

a. Conduct necessary operational (crew) maintenance
b. Top off fuel tanks
c. Check basic load of ammunition
d. Check basic load of Class I supplies

e. Check basic load of spare parts
f. Boresight 105mm gun
g. Boresight .30 cal coaxial machinegun
h. Boresight .50 cal machinegun
i. Boresight searchlight
j. Check all communications equipment
k. Check all firing switches
l. Take gun out of travel lock and place turret in operation

5. Fire-mission profile for a hard-point target in the attack.

(a) Situation. The M60A1 Tank is moving across country at 10 MPH when the Tank Commander observes an enemy main battle tank moving across its front from left to right at 1500 meters. The weather is clear and visibility is 3000 meters.

CREW ACTIONS

| | Target Acquisition Point | | End of Engagement Point | |
|---|---|---|---|---|
| N POSITION | TANK MOVING ACROSS COUNTRY | INITIAL FIRE COMMAND | SUBSEQUENT FIRE COMMAND | SUBSEQUENT ACTIONS |
| Tank Commander | Searches for targets. | Ranges on target and issues initial fire command. | Senses round. Announces range/deflection and order to fire. Announces target, cease fire. | Orders driver to move out in prescribed directions. Searches for new target. |
| Gunner | Searches for targets. | Identifies the target. Lays main gun for range and deflection, taking proper lead. Announces "ON-THE-WAY" and fires. | Makes correction for range/deflection. Announces "ON-THE-WAY" and fires. | Checks fire control system, and searches for new target. |
| Loader | Searches for targets. | Identifies APDS ammunition. Loads weapon. Announces "UP." | Reloads main gun and announces "UP." | Disposes of expended cartridge. Searches for new target. |
| Driver | Drives tank, searches for target. | Seeks defilaide firing position, and halts tank. Observes fire. | Observes fire. | Moves out in prescribed direction, seeking covered route. |

(b) Situation. The M60A1 Tank is stationary in a hull defilade position as part of a defensive position. During the hours of darkness the Tank commander is informed by his platoon leader that enemy troops are advancing on his position at a range of 1000 meters. A range card has been prepared covering the target area, and the platoon leader has designated another tank to provide illumination.

CREW ACTIONS

| | Target Acquisition Point | | End of Engagement Point | |
|---|---|---|---|---|
| CREW POSITION | ENEMY TROOPS ADVANCING | INITIAL FIRE COMMAND | SUBSEQUENT FIRE COMMAND | SUBSEQUENT ACTIONS |
| Tank Commander | Turns on infrared light, searches and locates target. | Issues initial fire command. | Senses round. Announces range/deflection correction and order to fire. Announces target, cease fire. | Searches area with infrared to determine coverage of area and if additional targets should be engaged. Reports situation. |
| Gunner | Examines range card, lays gun on reference point. | Identifies target, and lays main gun for range and deflection. Announces "ON-THE-WAY" and fires. | Makes correction for range/deflection. Announces "ON-THE-WAY" and fires. | Relays gun on reference point and further studies range card for possible additional targets. |
| Loader | | Selects proper ammunition (BEEHIVE). Makes prescribed fuze setting. Loads round of ammunition. | Prepares and loads additional round, if required. Assists gunner in the event of stoppage of coaxial machinegun. | Checks ammunition and weapons in the event of subsequent target engagement. |
| Driver | Dismounts to the flank and front of tank providing local security. | Selects proper ammunition (BEEHIVE). Makes prescribed fuze setting. Loads round of ammunition. | Prepares and loads additional round, if required. Assists gunner in the event of stoppage of coaxial machinegun. | Checks ammunition and weapons in the event of subsequent target engagement. |

(c) Situation. The M60A1 Tank is moving across country in the attack at 10 MPH when the tank commander observes an enemy convoy of three trucks moving across his front from left to right at an estimated range of 1000 meters. The weather is clear and visibility is 2500 meters.

CREW ACTIONS

| | Target Acquisition Point | | End of Engagement Point | |
|---|---|---|---|---|
| CREW POSITION | ENEMY CONVOY MOVING ACROSS THE FRONT | INITIAL FIRE COMMAND | SUBSEQUENT FIRE COMMAND | SUBSEQUENT ACTIONS |
| Tank Commander | Searches for targets. | Issues initial fire command. Engages enemy trucks from right to left with cal .50 machinegun. | Senses rounds for coaxial machinegun. Announces range/deflection corrections. Makes necessary adjustment of cal .50 machinegun firing. | Searches area through periscope to insure complete coverage. |
| Gunner | Searches for targets. | Identifies the target. Lays coaxial machinegun, taking necessary lead and engaging target area from right to left. | Makes necessary correction in range/deflection. | Searches area through periscope to insure complete coverage. |
| Loader | Searches for targets. | Assists the gunner in the event of any stoppages of the coaxial machinegun. | Continues to assist the gunner with any immediate action required for the coaxial machinegun. | Disposes of expended cartridges. Searches for new target. |
| Driver | Drives tank, searches for targets. | Keeps tank at even speed on as smooth a course as possible. | Warns crew of any impending change in speed or direction. | Continues in prescribed direction, seeking best route. |

## Mission Profiles

(Commander, Gunner, Driver, and Loader)

M60A1 Tank

(Laying and Firing the Tank Main Gun)

| Phase | Task | Performed By | | | | Initial Turret Control | | Target Motion | | Visibility | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Task Commander | Gunner | Leader | Driver | Tank Commander | Gunner | Moving | Stationary | Unrestricted | Restricted |
| Laying | 1. Alert crew to presence of target | x | | | | x | x | x | x | x | x |
| | 2. Insure turret power switch in ON position | | x | | | x | x | x | x | x | x |
| | 3. Insure turret free of obstructions which would prevent traverse | | | x | | x | x | x | x | x | x |
| | 4. Designate type of ammunition | x | | | | x | x | x | x | x | x |
| | 5. Specify illumination | x | | | | x | x | x | x | | x |
| | 6. Describe target | x | | | | x | x | x | x | x | x |
| | 7. Announce estimated speed of target | x | | | | x | x | x | | x | x |
| | 8. Direct driver to stop tank | x | | | | x | x | x | x | x | x |
| | 9. Stop tank | | | | x | x | x | x | x | x | x |
| | 10. Lay gun for direction | x | | | | x | | x | x | x | x |
| | 11. Announce direction | x | | | | | x | x | x | x | x |
| | 12. Lay gun for direction | | x | | | | x | x | x | x | x |
| | 13. Acknowledge recognition of target | | x | | | x | x | x | x | x | x |

| Phase | Task | Performed By | | | | Initial Turret Control | | Target Motion | | Visibility | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Task Commander | Gunner | Leader | Driver | Tank Commander | Gunner | Moving | Stationary | Unrestricted | Restricted |
| Laying (cont'd.) | 14. Release control of turret to gunner | x | | | | x | | x | x | x | x |
| | 15. Index ammunition into computer | | x | | | x | x | x | x | x | x |
| | 16. Select firing switch | | x | | | x | x | x | x | x | x |
| | 17. Select round to be loaded | | | x | | x | x | x | x | x | x |
| | 18. Set fuze on round, if required | | | x | | x | x | x | x | x | x |
| | 19. Load round | | | x | | x | x | x | x | x | x |
| | 20. Lay on target | | x | | | x | x | x | x | x | x |
| | 21. Apply initial lead | | x | | | x | x | x | | x | x |
| Firing | 1. Issue command to fire | x | | | | x | x | x | x | x | x |
| | 2. Announce ON THE WAY | | x | | | x | x | x | x | x | x |
| | 3. Fire main gun | | x | | | x | x | x | x | x | x |

APPENDIX B SAMPLE TASK INVENTORY QUESTIONNAIRE:

155MM HOWITZER (SP)
POSITION: GUNNER

JOB TASK INVENTORY QUESTIONNAIRE

TASK INVENTORY

Instructions: Read the following directions.

The Army needs accurate information about the work you do. The Job Task Inventory Questionnaire is the means by which you supply this information. It is NOT a test, and the results will not be used to evaluate you, your supervisor, nor your unit. In filling out the questionnaire, you are responsible for giving accurate information about the work you do.

General Directions for This Section

Before filling out this Questionnaire, there are a few points we need to make clear.

(1) You are going to be asked to describe your present job in terms of job tasks. You do not report tasks performed by other persons working with you unless you also do the tasks as part of your regular job. If you take over additional tasks for a few days while someone is away, you do not report this work.

(2) Work that is not part of your present job will be left out, no matter how often you did it in the past.

(3) We are interested in only a small part of your job as a crew member. We want you to think about all the tasks or activities involved in preparing the weapon for firing and engaging an enemy target. Tasks concerned with maintenance, communication, tactics, supply, and other support functions should not be included on the lists.

(4) In describing your present job, go back as far in time as necessary to get a true picture. You will probably need to go back not less than one month nor more than a year.

(5) Use the last page for write-in space. Write in any tasks you perform that were not on the list.

Directions for Rating Scales

Read each TASK and, as you read, decide if your job (all of your duties) normally requires you to perform that particular TASK. If it does not, draw a line through the task, write 0 (zero) in Column A and go on to the next TASK. If it does, fill in Column A using the rating scales below.

Use Rating Scale A for column A to select the numeral between 1 and 5 that best describes the extent to which the TASK is a significant part of your job (in terms of time and/or importance).

RATING SCALE A

| | |
|---|---|
| 1 - INSIGNIFICANT part of my job/duties | -1 |
| 2 - NOMINALLY SIGNIFICANT part | -2 |
| 3 - MODERATELY SIGNIFICANT part of my job/duties | -3 |
| 4 - SIGNIFICANT part | -4 |
| 5 - HIGHLY SIGNIFICANT part of my job/duties | -5 |

It is important to the objective of this study that you respond only to TASKS that are a part of your job and that you respond to all of the TASKS that are a part of your job.

Read each TASK carefully.

(1) Decide whether or not you do it.

(2) Rate its significance as a part of your job/duties.

(3) If you do not understand the meaning of a TASK, that TASK is probably NOT a part of your job and you should not respond to it.

## Background Information

1. Name _____

2. Rank/Grade _____

3. Primary MOS ____ ____ ____ ____ ____

4. Duty MOS ____ ____ ____ ____ ____

5. What is your current crew position for the M109, 155mm SP howitzer/_____? (Check One)

   _____Chief of Section

   _____Gunner

   _____Assistant Gunner

   _____No. 1 Cannoneer

   _____No. 2 Cannoneer

   _____No. 3 Cannoneer

   _____No. 4 Cannoneer

   _____No. 5 Cannoneer

   _____No. 6 Cannoneer

   _____Driver

   a. How long have you been in that position?_____

   b. How much time have you spent in combat in that position (if any)? _____

6. What other M109, 155mm SP howitzer/_____
crew position have you held? (Check One)

_____Chief of Section

_____Gunner

_____Assistant Gunner

_____No. 1 Cannoneer

_____No. 2 Cannoneer

_____No. 3 Cannoneer

_____No. 4 Cannoneer

_____No. 5 Cannoneer

_____No. 6 Cannoneer

_____Driver

a. How long were you in that position? _____

b. How much time did you spend in combat in that position (if any)?

_____

7. What crew positions have you had with other cannons? (List all positions including the weapon system.)

| Weapon System | Position Title | Length of Time in Position | Length of Time in Position in Combat (If Any) |
|---|---|---|---|
| | | | |
| | | | |
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## GUNNER

Rating Scale - Column A

1 - INSIGNIFICANT part of my job/duties
2 - NOMINALLY SIGNIFICANT part
3 - MODERATELY SIGNIFICANT part of my job/duties
4 - SIGNIFICANT part
5 - HIGHLY SIGNIFICANT part of my job/duties

| PREPARE FOR ACTION: | A |
|---|---|
| 1. Release cab traverse lock | |
| 2. Place cab power switch to On | |
| 3. Select No. 1 gunner for power elevation | |
| 4. Check equilibrator fluid level | |
| 5. Check cab hydraulic system power pack pressure | |
| 6. Assist driver in disengaging traveling lock | |
| 7. Check functioning of traversing mechanism | |
| 8. Command driver to lift and lock ballistic cover | |
| 9. Install panoramic telescope | |
| 10. Uncover azimuth 6400-mil counter and zero gunner's aid counter | |
| 11. Set azimuth counter to 3200 mils | |
| 12. Level telescope mount | |
| 13. Test and align (boresight) fire control equipment | |
| 14. Lay howitzer for direction | |
| 15. Identify aiming point through telescope | |
| 16. Set announced deflection on azimuth counter | |
| 17. Traverse cab until reticle pattern of telescope is centered on objective lens of aiming circle | |
| 18. Checks that pitch- and cross-level bubbles are centered | |
| 19. Direct alignment of aiming posts and/or collimator | |

GUNNER (continued)

Rating Scale - Column A

1 - INSIGNIFICANT part of my job/duties
2 - NOMINALLY SIGNIFICANT part
3 - MODERATELY SIGNIFICANT part of my job/duties
4 - SIGNIFICANT part
5 - HIGHLY SIGNIFICANT part of my job/duties

| PREPARE FOR ACTION (cont'd): | A |
|---|---|
| 20. Lay on alternate aiming point | |
| INDIRECT FIRE: | |
| 21. Set and lay for deflection | |
| 22. Set announced deflection on reset counter | |
| 23. Traverse piece until vertical reticle of telescope is on left edge of aiming point or proper sight picture in collimator | |
| 24. Center pitch- and cross-level bubbles | |
| 25. Correct for displacement when vertical reticle is displaced | |
| 26. Place gunner's elevating control switch to Gunner* | |
| 27. Place announced quadrant on the elevation counter* | |
| 28. Elevate tube until elevation-level bubble is centered* | |
| 29. Refer piece | |
| DIRECT FIRE: | |
| 30. Prepare panoramic telescope for direct laying | |
| 31. Actuate click sight mechanism | |
| 32. Set initial lead on azimuth counter | |
| 33. Traverse howitzer until vertical reticle is centered on target | |
| 34. Maintain sight picture by continuous tracking of target | |
| 35. Give command "Fire" | |

*When the one-man, one-sight system is used

GUNNER (continued)

Rating Scale - Column A

1 - INSIGNIFICANT part of my job/duties
2 - NOMINALLY SIGNIFICANT part
3 - MODERATELY SIGNIFICANT part of my job/duties
4 - SIGNIFICANT part
5 - HIGHLY SIGNIFICANT part of my job/duties

| DIRECT FIRE (cont'd): | A |
|---|---|
| 36. Turn azimuth knob in 5-mil increments to set lead changes as directed | |
| 37. Lay for deflection | |
| 38. Announce range and set elevation quadrant* | |
| 39. Elevate howitzer until bubble in pitch-level vial is centered* | |
| 40. Center cross-level bubble on the panoramic telescope mount* | |

*When one-man, one-sight system is used

Please write in additional tasks in the spaces below

Rating Scale - Column A

1 - INSIGINFICANT part of my job/duties
2 - NOMINALLY SIGNIFICANT part
3 - MODERATELY SIGNIFICANT part of my job/duties
4 - SIGNIFICANT part
5 - HIGHLY SIGNIFICANT part of my job/duties

| | A |
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## APPENDIX C DESCRIPTIVE STATISTICS FOR PERSONNEL

### Table C-1

### NUMBER PARTICIPATING, BY RANK, IN EACH WEAPON SYSTEM

| Rank | 81MM | 155MM | M60A1 |
|---|---|---|---|
| E1 | 4 | 8 | 2 |
| E2 | 27 | 36 | 18 |
| E3 | 55 | 42 | 29 |
| E4 | 32 | 27 | 36 |
| E5 | 24 | 21 | 13 |
| E6 | 3 | 15 | 23 |
| E7 | 0 | 0 | 27 |
| E8 | 0 | 0 | 1 |
| 2LT | 0 | 0 | 2 |
| TOTAL | 145 | 149 | 151 |

Table C-2

NUMBER PARTICIPATING, BY MONTHS OF DUTY, IN EACH WEAPON SYSTEM

| Time (Months) | 81MM | 155MM | M60A1 |
|---|---|---|---|
| 1 | 26 | 10 | 4 |
| 2 | 9 | 10 | 15 |
| 3 | 16 | 18 | 10 |
| 4 | 8 | 11 | 3 |
| 5 | 11 | 5 | 0 |
| 6 | 15 | 17 | 8 |
| 7 | 6 | 6 | 2 |
| 8 | 6 | 7 | 2 |
| 9 | 8 | 2 | 1 |
| 10 | 7 | 7 | 7 |
| 11 | 1 | 4 | 4 |
| 12 | 9 | 10 | 14 |
| 13 | 1 | 3 | 3 |
| 14 | 3 | 0 | 3 |
| 15 | 2 | 1 | 4 |
| 16 | 1 | 0 | 4 |
| 17 | 0 | 0 | 4 |
| 18 | 2 | 2 | 6 |
| 19 | 0 | 0 | 4 |
| 20 | 0 | 1 | 3 |
| 21 | 1 | 2 | 1 |
| 22 | 0 | 0 | 2 |
| 23 | 1 | 0 | 1 |
| 24 | 5 | 5 | 4 |
| 25 | 0 | 0 | 1 |
| 26 | 1 | 0 | 0 |
| 30 | 2 | 1 | 0 |
| 32 | 1 | 0 | 1 |
| 33 | 0 | 0 | 1 |
| 36 | 0 | 3 | 3 |
| 39 | 0 | 0 | 1 |

Table C-2 (continued)

| Time (Months) | 81MM | 155MM | M60A1 |
|---|---|---|---|
| 42 | 1 | 0 | 0 |
| 45 | 0 | 0 | 1 |
| 48 | 1 | 1 | 4 |
| 50 | 0 | 0 | 1 |
| 54 | 1 | 0 | 0 |
| 60 | 1 | 1 | 9 |
| 62 | 0 | 0 | 1 |
| 72 | 0 | 1 | 0 |
| 84 | 0 | 1 | 0 |
| 96 | 0 | 2 | 1 |
| 108 | 0 | 1 | 1 |
| 114 | 0 | 0 | 1 |
| 156 | 0 | 1 | 0 |
| 168 | 0 | 0 | 3 |
| 180 | 0 | 0 | 2 |
| 192 | 0 | 0 | 3 |
| 204 | 0 | 0 | 1 |
| 216 | 0 | 0 | 1 |
| 240 | 0 | 0 | 2 |
| TOTAL | 146 | 133 | 147 |

Table C-3

NUMBER PARTICIPATING, BY MONTHS OF COMBAT, IN EACH WEAPON SYSTEM

| Time (Months) | 81MM | 155MM | M60A1 |
|---|---|---|---|
| 0 | 137 | 129 | 121 |
| 1 | 0 | 0 | 2 |
| 2 | 0 | 1 | 0 |
| 3 | 0 | 1 | 0 |
| 4 | 0 | 2 | 1 |
| 6 | 2 | 2 | 1 |
| 8 | 1 | 1 | 2 |
| 9 | 1 | 0 | 0 |
| 10 | 0 | 0 | 1 |
| 11 | 0 | 0 | 3 |
| 12 | 2 | 5 | 15 |
| 13 | 0 | 1 | 1 |
| 14 | 1 | 0 | 0 |
| 18 | 1 | 2 | 0 |
| 20 | 0 | 0 | 1 |
| 22 | 0 | 0 | 1 |
| 24 | 0 | 4 | 1 |
| 25 | 0 | 4 | 1 |
| 36 | 1 | 0 | 0 |
| 38 | 0 | 1 | 0 |
| TOTAL | 146 | 153 | 151 |

APPENDIX D

# RANKED TASK INVENTORIES FOR THE M60A1 TANK 155 MM HOWITZER (SP) 81MM MORTAR

## INCLUDING AN IDENTIFICATION(*) OF TASKS COMMON TO THE TOP ONE-THIRD OF EACH LIST

DRAGON M6OA1 TANK JOB ANALYSIS
TANK COMMANDER

WEAPON CODE = 8  POSITION =1  TASKS =43  MEMBERS = 44

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| *12 | ANALYZE A TARGET RAPIDLY AND SELECT BEST AVAILABLE AMMUNITIO | 100.00 | 2.95 | 2.95 | 2.95 | |
| *9 | ANNOUNCE AN INITIAL FIRE COMMAND. | 100.00 | 2.92 | 2.92 | 5.86 | |
| 11 | LAY THE MAIN GUN FOR DIRECTION. | 100.00 | 2.86 | 2.86 | 8.72 | |
| * 3 | LOAD AND CHARGE THE CUPOLA MACHINEGUN (50 CAL). | 100.00 | 2.80 | 2.80 | 11.52 | |
| 47 | SELECT FIRING POSITIONS. | 100.00 | 2.79 | 2.79 | 14.31 | 5 |
| 33 | DISTINGUISH BETWEEN FRIENDLY AND ENEMY PERSONNEL AND MATERIA | 100.00 | 2.79 | 2.79 | 17.09 | |
| * 4 | PREPARE TO FIRE THE CUPOLA MACHINEGUN. | 100.00 | 2.79 | 2.79 | 19.88 | |
| * 5 | FIRE THE CUPOLA MACHINEGUN. | 100.00 | 2.78 | 2.78 | 22.66 | |
| *18 | RANGE ON A TARGET, UTILIZING THE RANGE FINDER. | 100.00 | 2.78 | 2.78 | 25.44 | |
| 8 | RESPOND TO A CUPOLA MACHINEGUN MISFIRE. | 100.00 | 2.74 | 2.74 | 28.19 | 10 |
| 45 | BORESIGHT AND ZERO THE 50 CAL MACHINEGUN. | 100.00 | 2.74 | 2.74 | 30.93 | |
| 15 | RELEASE CONTROL OF TURRET TO GUNNER UPON HEARING IDENTIFIED. | 100.00 | 2.73 | 2.73 | 33.66 | |
| *17 | PLACE THE RANGE FINDER IN OPERATION. | 97.69 | 2.76 | 2.70 | 36.36 | |
| 13 | DESIGNATE SPECIFIC TARGET WHEN MORE THAN ONE IS OBSERVED. | 97.69 | 2.75 | 2.69 | 39.04 | |
| * 6 | UNLOAD THE CUPOLA MACHINEGUN. | 100.00 | 2.68 | 2.68 | 41.72 | 15 |
| *10 | TURN ON THE XEON SEARCHLIGHT. | 100.00 | 2.67 | 2.67 | 44.39 | |
| 48 | OPERATE TANK COMMANDER'S INFRARED CONTROLS AND EQUIPMENT. | 97.69 | 2.72 | 2.66 | 47.05 | |
| 7 | UNLOAD A RUPTURED CARTRIDGE CASE FROM THE CUPOLA MACHINEGUN. | 97.69 | 2.62 | 2.56 | 49.61 | |
| 23 | INSPECT FOR SAFETY OF CREW BEFORE TRAVERSING TURRET. | 100.00 | 2.52 | 2.52 | 52.13 | |
| 20 | ANNOUNCE RANGE WHEN RANGE FINDER CANNOT MECHANICALLY TRANSMI | 100.00 | 2.50 | 2.50 | 54.63 | 20 |
| 22 | IDENTIFY TARGET PROVIDED BY THE PLATOON LEADER. | 100.00 | 2.46 | 2.46 | 57.09 | |
| 14 | PROVIDE GUIDANCE TO THE GUNNER FOR LAYING THE MAIN GUN FOR D | 97.69 | 2.48 | 2.42 | 59.51 | |
| 21 | IDENTIFY TARGET PROVIDED BY ANOTHER CREW MEMBER. | 97.69 | 2.42 | 2.37 | 61.88 | |
| 1 | PLACE THE TURRET CUPOLA INTO POWER OPERATION. | 90.38 | 2.57 | 2.33 | 64.21 | |
| 46 | BORESIGHT AND ZERO THE MAIN GUN. | 93.13 | 2.48 | 2.31 | 66.52 | 25 |
| 2 | DEACTIVATE THE TURRET CUPOLA FROM POWER OPERATION. | 84.63 | 2.47 | 2.19 | 68.72 | |
| 38 | ENGAGE TARGETS, UTILIZING ARTIFICIAL ILLUMINATION. | 95.44 | 2.26 | 2.16 | 70.88 | |
| 37 | TROUBLESHOOT MALFUNCTIONS OF THE MAIN GUN. | 93.13 | 2.31 | 2.15 | 73.03 | |
| 16 | MEASURE DEFLECTION SHIFT IN MILS, UTILIZING A REFERENCE PIN | 95.44 | 2.19 | 2.09 | 75.12 | |
| 41 | OPERATE HEADSET AND CHEST SET. | 93.13 | 2.24 | 2.09 | 77.21 | 30 |

DRAGON MODAL TANK JOB ANALYSIS
TANK COMMANDER

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 42 | PREPARE A RANGE CARD. | 95.44 | 2.12 | 2.03 | 79.23 | |
| 26 | INDEX APPROPRIATE RANGE, IF REQUIRED. | 84.16 | 2.37 | 1.99 | 81.23 | |
| 43 | FIRE FROM A RANGE CARD. | 93.13 | 2.06 | 1.92 | 83.15 | |
| 42 | ESTIMATE SPEED OF MOVING TARGETS. | 90.88 | 2.02 | 1.84 | 84.99 | |
| 27 | APPLY MIL RELATION FORMULA. | 84.06 | 1.96 | 1.65 | 86.64 | 35 |
| 31 | PERFORM THE NON-SENSING METHOD OF ADJUSTMENT. | 84.06 | 1.90 | 1.60 | 88.24 | |
| 44 | BORESIGHT AND ZERO THE COAXIAL MACHINEGUN. | 81.81 | 1.71 | 1.40 | 89.64 | |
| 39 | CHECK AZIMUTH INDICATOR FOR ACCURACY AND SLIPPAGE. | 75.00 | 1.60 | 1.20 | 90.84 | |
| 30 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT AGAINST A MOV | 92.13 | 1.68 | 1.14 | 91.98 | |
| 35 | FIRE COAXIAL MACHINEGUN. | 77.25 | 1.40 | 1.08 | 93.06 | 4 |
| 36 | FIRE COAXIAL MACHINEGUN AT A MOVING TARGET. | 77.25 | 1.36 | 1.05 | 94.11 | |
| 40 | READ THE COMPUTER. | 75.69 | 1.42 | 1.03 | 95.15 | |
| 34 | PREPARE TO FIRE COAXIAL MACHINEGUN. | 90.38 | 1.36 | 0.82 | 96.04 | |
| 28 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT, UTILIZING | 86.06 | 1.49 | 0.88 | 96.92 | |
| 19 | PURGE MAIN GUN HYDRAULIC SYSTEM. | 65.98 | 1.28 | 0.84 | 97.77 | 45 |
| 25 | INDEX APPROPRIATE AMMUNITION. | 61.41 | 1.24 | 0.76 | 98.52 | |
| 29 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT, UTILIZING T | 54.50 | 1.38 | 0.75 | 99.28 | |
| 24 | TURN ON APPROPRIATE GUN SWITCH. | 59.36 | 1.22 | 0.72 | 100.00 | 48 |

DRAGON MEDAL TANK JOB ANALYSIS
GUNNER

WEAPON CODE = 8  POSITION =2  TASKS =37  MEMBERS = 43

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 33 | BORESIGHT AND ZERO THE MAIN GUN. | 100.00 | 3.40 | 3.40 | 3.40 | |
| 36 | EMPLOY INFRARED SIGHTS. | 100.00 | 3.15 | 3.15 | 6.54 | |
| 1 | COMPLY WITH THE ELEMENTS OF A FIRE COMMAND. | 95.31 | 3.28 | 3.13 | 9.68 | |
| *37 | ENGAGE TARGETS, USING ARTIFICIAL ILLUMINATION. | 100.00 | 3.09 | 3.09 | 12.76 | |
| *34 | BORESIGHT AND ZERO THE COAXIAL MACHINEGUN. | 100.00 | 3.08 | 3.08 | 15.85 | 5 |
| 32 | FIRE FROM A RANGE CARD. | 97.63 | 3.07 | 3.00 | 18.85 | |
| * 7 | IDENTIFY THE TARGET. | 100.00 | 2.98 | 2.98 | 21.82 | |
| 31 | PREPARE A RANGE CARD. | 100.00 | 2.95 | 2.95 | 24.77 | |
| 11 | TRAVERSE RAPIDLY IN THE ANNOUNCED DIRECTION AS INDICATED BY | 100.00 | 2.93 | 2.93 | 27.70 | |
| 14 | ANNOUNCE ON-THE-WAY AND FIRE. | 95.31 | 3.06 | 2.92 | 30.61 | 10 |
| 35 | BORESIGHT THE SEARCHLIGHT. | 100.00 | 2.87 | 2.87 | 33.48 | |
| 22 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT AGAINST A MOVI | 97.63 | 2.93 | 2.87 | 36.35 | |
| 15 | IF UTILIZING TELESCOPIC SIGHT, SELECT PROPER RETICLE AS INDI | 93.00 | 3.06 | 2.84 | 39.19 | |
| 3 | PLACE THE TURRET IN POWER OPERATION. | 95.31 | 2.98 | 2.84 | 42.03 | |
| 5 | INDEX ANNOUNCED AMMUNITION. | 93.00 | 3.04 | 2.83 | 44.86 | 15 |
| 4 | TURN ON APPROPRIATE GUN SWITCH. | 90.69 | 3.04 | 2.76 | 47.62 | |
| 9 | UPON RECEIPT OF RANGE ELEMENT OF THE FIRE COMMAND, MAKE A PR | 93.00 | 2.96 | 2.75 | 50.37 | |
| 17 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT, UTILIZING THE | 93.00 | 2.95 | 2.75 | 53.12 | |
| 16 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT, UTILIZING THE | 93.00 | 2.93 | 2.72 | 55.84 | |
| 10 | APPLY THE INITIAL LEAD FOR A MOVING TARGET. | 93.00 | 2.92 | 2.72 | 58.56 | 20 |
| 26 | DISTINGUISH BETWEEN FRIENDLY AND ENEMY PERSONNEL AND MATERIA | 97.63 | 2.77 | 2.70 | 61.26 | |
| 23 | APPLY TANK COMMANDER'S CORRECTION FOR SUBSEQUENT ROUNDS AGAI | 93.00 | 2.89 | 2.69 | 63.95 | |
| 19 | APPLY TANK COMMANDER'S CORRECTIONS FOR ADJUSTING FIRE, UTILI | 93.00 | 2.88 | 2.68 | 66.63 | |
| 18 | APPLY TANK COMMANDER'S CORRECTIONS FOR ADJUSTING FIRE, UTILI | 93.00 | 2.86 | 2.66 | 69.29 | |
| 20 | APPLY NON-SENSING METHOD OF ADJUSTMENT, WHEN REQUIRED. | 97.63 | 2.72 | 2.66 | 71.94 | 25 |
| 12 | LOCATE DIRECTION OF TARGET BY REFERENCE POINT WHEN REQUIRED. | 97.63 | 2.71 | 2.65 | 74.59 | |
| 8 | POSITION THE PERISCOPE RETICLE TO FACILITATE RANGING. | 90.69 | 2.86 | 2.59 | 77.19 | |
| 2 | ASSURE TURRET TRAVERSING AREA IS CLEAR OF PERSONNEL AND OBST | 95.31 | 2.70 | 2.57 | 79.76 | |
| 24 | FIRE COAXIAL MACHINEGUN, USING INFINITY SIGHT IN THE VIEWING | 93.00 | 2.76 | 2.56 | 82.32 | |
| 25 | SEARCH FOR TARGETS THROUGH THE VIEWING WINDOW OF THE PERISCO | 93.00 | 2.66 | 2.47 | 84.79 | 30 |

DRAGON M60A1 TANK JOB ANALYSIS
GUNNER

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 6 | LOOK THROUGH VISION BLOCK TO LOCATE THE TARGET. | 95.31 | 2.59 | 2.47 | 87.26 | |
| 29 | ASSIST TANK COMMANDER IN LOCATING THE DIFFICULTY WHEN THE GU | 95.31 | 2.53 | 2.41 | 89.68 | |
| 27 | UPON DETECTION OF ENEMY TARGET, PROVIDE TANK COMMANDER WITH | 93.00 | 2.44 | 2.27 | 91.95 | |
| 30 | ASSIST LOADER IN LOCATING THE DIFFICULTY WHEN THE GUN FAILS | 95.31 | 2.16 | 2.06 | 94.00 | |
| 28 | ASSIST THE LOADER IF THE MAIN GUN FAILS TO LOAD. | 97.63 | 2.07 | 2.02 | 96.02 | 35 |
| 13 | INDEX THE RANGE, IF REQUIRED. | 90.69 | 2.22 | 2.01 | 98.04 | |
| 21 | ESTIMATE SPEED OF MOVING TARGET. | 95.31 | 2.06 | 1.96 | 100.00 | 37 |

DRAGON M60A1 TANK JOB ANALYSIS
LOADER

WEAPON CODE = 8  POSITION =3  TASKS =33  MEMBERS = 43

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| * 1 | IDENTIFY ALL TYPES OF TANK AMMUNITION. | 100.00 | 3.99 | 3.99 | 3.99 | |
| 6 | INSURE PATH OF MAIN GUN RECOIL IS CLEAR. | 100.00 | 3.80 | 3.80 | 7.79 | |
| 29 | READ REPLENISHER TAPE. | 100.00 | 3.72 | 3.72 | 11.51 | |
| 14 | TAKE IMMEDIATE ACTION IN CASE OF A STOPPAGE OF THE MACHINEGU | 97.63 | 3.73 | 3.65 | 15.15 | |
| 5 | ANNOUNCE UP WHEN THE WEAPON IS LOADED AND READY TO BE FIRED. | 95.31 | 3.71 | 3.54 | 18.69 | 5 |
| 3 | LOAD AMMUNITION ANNOUNCED BY THE TANK COMMANDER. | 95.31 | 3.70 | 3.53 | 22.22 | |
| 4 | INSURE SAFETY SWITCHES ARE ON OR OFF AS REQUIRED. | 95.31 | 3.69 | 3.52 | 25.74 | |
| 17 | STOW MAIN GUN AMMUNITION. | 97.63 | 3.58 | 3.50 | 29.24 | |
| 15 | TAKE IMMEDIATE ACTION IN CASE OF A RUNAWAY COAXIAL MACHINEGU | 97.63 | 3.56 | 3.47 | 32.72 | |
| 7 | CONTINUE TO LOAD UNTIL THE TANK COMMANDER ANNOUNCES CEASE FI | 95.31 | 3.56 | 3.39 | 36.11 | 10 |
| 11 | INSTALL COAXIAL MACHINEGUN. | 97.63 | 3.43 | 3.35 | 39.46 | |
| 16 | UNLOAD THE COAXIAL MACHINEGUN. | 95.31 | 3.44 | 3.28 | 42.75 | |
| 18 | STOW COAXIAL MACHINEGUN AMMUNITION. | 97.63 | 3.36 | 3.29 | 46.03 | |
| 13 | LOAD COAXIAL MACHINEGUN. | 95.31 | 3.41 | 3.26 | 49.28 | |
| 10 | DISASSEMBLE, MAINTAIN AND ASSEMBLE COAXIAL MACHINEGUN. | 97.63 | 3.29 | 3.21 | 52.50 | 15 |
| 21 | UNLOAD A ROUND BY USE OF RAMMING AND EXTRACTING TOOL. | 97.63 | 3.23 | 3.16 | 55.65 | |
| 20 | UNLOAD A ROUND OR CARTRIDGE CASE THAT DOES NOT AUTOMATICALLY | 95.31 | 3.29 | 3.14 | 58.79 | |
| 19 | UNLOAD A MAIN GUN ROUND FOR WHICH NO ATTEMPT HAS BEEN MADE T | 93.00 | 3.33 | 3.09 | 61.89 | |
| 23 | DISPOSE OF EMPTY CARTRIDGE CASES. | 100.00 | 3.07 | 3.07 | 64.96 | |
| 9 | REMOVE COAXIAL MACHINEGUN. | 95.31 | 3.15 | 3.00 | 67.96 | 20 |
| 2 | AID TANK COMMANDER IN ACQUIRING TARGETS. | 90.69 | 3.22 | 2.92 | 70.88 | |
| 8 | SET AMMUNITION FUZES, IF REQUIRED. | 95.31 | 3.00 | 2.86 | 73.74 | |
| 12 | BORESIGHT COAXIAL MACHINEGUN. | 93.00 | 3.04 | 2.82 | 76.57 | |
| 26 | UNLOCK, MAINTAIN AND LOCK GUN TRAVEL LOCK. | 93.00 | 2.91 | 2.70 | 79.27 | |
| 25 | CHECK ODDMENT TRAYS, BRACKETS, GUN TOOL ROLL AND TURRET BUST | 88.31 | 2.95 | 2.61 | 81.88 | 25 |
| 27 | MAINTAIN, INSTALL AND OPERATE HEADSET AND CHEST SET. | 88.31 | 2.94 | 2.59 | 84.47 | |
| 30 | CHECK OPERATION OF THE INTERPHONE CONTROL BOX AND INTERPHONE | 90.69 | 2.83 | 2.57 | 87.04 | |
| 22 | UNLOAD A STUCK PROJECTILE WHEN SEPARATED FROM THE CARTRIDGE | 88.31 | 2.89 | 2.55 | 89.59 | |
| 24 | CHECK TURRET BLOWER. | 93.00 | 2.70 | 2.51 | 92.10 | |
| 28 | REMOVE, INSTALL LOADER'S PERISCOPE. | 88.31 | 2.77 | 2.44 | 94.55 | 30 |

DRAGON M60A1 TANK JOB ANALYSIS
LOADER

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 32 | CHECK AND MAINTAIN OPERATION OF THE EXTERNAL INTERPHONE. | 83.69 | 2.19 | 1.84 | 96.38 | |
| 33 | INSTALL, REMOVE AND OPERATE ALL RADIO COMPONENTS. | 88.31 | 2.06 | 1.82 | 98.20 | |
| 31 | ENTER PRESCRIBED RADIO NET. | 86.00 | 2.09 | 1.80 | 100.00 | 33 |

DRAGON M60A1 TANK JOB ANALYSIS
DRIVER

WEAPON CODE = 8  POSITION =4  TASKS =20  MEMBERS = 18

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 10 | DRIVE AT NIGHT. | 100.00 | 5.85 | 5.85 | 5.85 | |
| 16 | STOP THE TANK ON TANK COMMANDER'S ORDER, BRINGING THE VEHICL | 100.00 | 5.78 | 5.78 | 11.63 | |
| 3 | CHECK TRANSMISSION OIL. | 100.00 | 5.78 | 5.78 | 17.41 | |
| 4 | CHECK MAIN ENGINE OIL. | 100.00 | 5.78 | 5.78 | 23.18 | |
| 2 | FILL FUEL TANKS. | 100.00 | 5.71 | 5.71 | 28.90 | 5 |
| 1 | DRIVE AND MANEUVER UNDER ALL WEATHER CONDITIONS AND OVER ALL | 100.00 | 5.71 | 5.71 | 34.60 | |
| 11 | DRIVE WITH DRIVER'S HATCH CLOSED. | 100.00 | 5.54 | 5.54 | 40.14 | |
| 12 | DRIVE TANK IN TACTICAL FORMATIONS. | 100.00 | 5.25 | 5.25 | 45.39 | |
| 6 | REMOVE, INSPECT AND INSTALL DRIVER'S PERISCOPES. | 100.00 | 5.19 | 5.19 | 50.58 | |
| 17 | DRIVE THE VEHICLE FORWARD SMOOTHLY WHEN MACHINEGUNS ARE USED | 88.88 | 5.75 | 5.11 | 55.69 | 10 |
| 9 | FORD WATER OBSTACLE OF FORDING DEPTH. | 100.00 | 4.95 | 4.95 | 60.64 | |
| 13 | TOW A DISABLED TANK. | 100.00 | 4.83 | 4.83 | 65.47 | |
| 20 | ALERT THE REST OF THE TANK CREW TO ANY IMPENDING ROUGHNESS I | 94.44 | 5.10 | 4.82 | 70.29 | |
| 14 | FREE A BELLIED OR MIRED TANK. | 100.00 | 4.77 | 4.77 | 75.05 | |
| 15 | SEARCH FOR GOOD FIRING POSITIONS THAT AFFORD PROTECTION FOR | 94.44 | 4.70 | 4.44 | 79.49 | 15 |
| 19 | ALERT THE REST OF THE TANK CREW TO ANY IMPENDING, ABRUPT CHA | 100.00 | 4.43 | 4.43 | 83.92 | |
| 7 | CLEAN, INSTALL AND REMOVE INFRARED PERISCOPE. | 100.00 | 4.37 | 4.37 | 88.30 | |
| 8 | INSTALL AND OPERATE TANK HELMET COMMUNICATIONS. | 94.44 | 4.50 | 4.25 | 92.54 | |
| 18 | AID THE TANK COMMANDER IN ACQUIRING TARGETS. | 94.44 | 4.00 | 3.78 | 96.32 | |
| 5 | CHECK ACCIDENT IDENTIFICATION AND OPERATOR'S REPORT OF MOTOR | 88.88 | 4.14 | 3.68 | 100.00 | 20 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
CHIEF OF SECTION

WEAPON CODE = 5 POSITION =1 TASKS =33 MEMBERS = 33

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.....
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| * 16 | INSURE EFFICIENT AND SAFE OPERATION | 100.00 | 3.55 | 3.55 | 3.55 | |
| 20 | CHECK FUNCTIONING OF MATERIAL DURING FIRING | 100.00 | 3.53 | 3.53 | 7.09 | |
| 5 | CHECK POSITION OF REPLENISHER TAPE INDICATOR AND RECUPERATOR | 100.00 | 3.53 | 3.53 | 10.62 | |
| 2 | SUPERVISE OPERATION DURING ENTIRE SEQUENCE | 100.00 | 3.48 | 3.48 | 14.10 | |
| * 6 | CHECK RECOIL SYSTEM | 100.00 | 3.48 | 3.48 | 17.57 | 5 |
| * 13 | VERIFY THAT PIECE IS READY FOR ACTION | 100.00 | 3.41 | 3.41 | 20.99 | |
| 28 | ESTIMATE RANGE TO TARGET | 100.00 | 3.41 | 3.41 | 24.40 | |
| 21 | REPORT ERRORS AND UNUSUAL INCIDENTS TO XO | 100.00 | 3.36 | 3.36 | 27.76 | |
| 14 | REPORT ANY DEFECTS THAT WILL CAUSE DELAY TO XO | 100.00 | 3.35 | 3.35 | 31.11 | |
| 17 | FOLLOW AND REPEAT FIRE COMMANDS | 96.94 | 3.43 | 3.33 | 34.44 | 10 |
| 18 | INDICATE WHEN PIECE IS READY TO FIRE | 100.00 | 3.33 | 3.33 | 37.77 | |
| 29 | DETERMINE LEAD IN MILS | 100.00 | 3.30 | 3.30 | 41.06 | |
| 8 | FOLLOW FIRE COMMANDS | 100.00 | 3.28 | 3.28 | 44.35 | |
| 31 | GIVE SUBSEQUENT COMMANDS FOR CHANGE IN LEAD AND RANGE | 100.00 | 3.27 | 3.27 | 47.62 | |
| 15 | COMMAND FIRE OF PIECE ON COMMAND OF XO | 100.00 | 3.26 | 3.26 | 50.88 | 15 |
| 30 | GIVE INITIAL COMMANDS IN SEQUENCE | 100.00 | 3.26 | 3.26 | 54.14 | |
| 26 | IDENTIFY OR SELECT TARGET | 93.94 | 3.42 | 3.21 | 57.35 | |
| 27 | IDENTIFY TARGET DESIGNATED BY XO | 100.00 | 3.19 | 3.19 | 60.54 | |
| 7 | DIRECT SERVICING OF PIECE | 100.00 | 3.15 | 3.15 | 63.68 | |
| 25 | GIVE COMMAND "CHECK FIRING" | 100.00 | 2.98 | 2.98 | 66.66 | 20 |
| 19 | GIVE COMMAND TO FIRE | 90.88 | 3.11 | 2.83 | 69.49 | |
| 32 | COMMANDS "END OF MISSION" | 96.94 | 2.92 | 2.83 | 72.32 | |
| 9 | MEASURE SITE TO CREST | 90.88 | 3.05 | 2.77 | 75.10 | |
| 3 | DIRECT RACKING OF CARRIAGE AGAINST SPADES | 100.00 | 2.76 | 2.76 | 77.86 | |
| 10 | INDICATE ALTERNATE AIMING POINT TO GUNNER | 96.94 | 2.83 | 2.75 | 80.60 | 25 |
| 11 | SELECT CLEARLY DEFINED POINT AT 1500 METERS OR MORE | 96.94 | 2.78 | 2.69 | 83.30 | |
| 22 | LAY FOR QUADRANT WITH GUNNER'S QUADRANT | 87.88 | 2.99 | 2.63 | 85.93 | |
| 1 | GIVE COMMAND "PREPARE FOR ACTION" | 93.94 | 2.63 | 2.47 | 88.40 | |
| 33 | GIVE FIRE COMMANDS WITH RANGE GIVEN IN FORM OF QUADRANT | 81.81 | 3.00 | 2.45 | 90.85 | |
| 24 | CONDUCT PREARRANGED FIRES | 93.94 | 2.57 | 2.42 | 93.27 | 30 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
CHIEF OF SECTION

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 4 | DIRECT DRIVER TO CUT ENGINE AND SET BRAKES | 96.94 | 2.47 | 2.40 | 95.66 | |
| 23 | MEASURE QUADRANT ON INITIAL ROUND | 97.88 | 2.51 | 2.20 | 97.87 | |
| 12 | READ AND RECORD DEFLECTIONS FROM AZIMUTH COUNTER (ALTERNATE | 94.81 | 2.51 | 2.13 | 100.00 | 33 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
GUNNER

WEAPON CODE = 5  POSITION =2  TASKS =40  MEMBERS = 29

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 9 | INSTALL PANORAMIC TELESCOPE | 100.00 | 2.99 | 2.99 | 2.99 | |
| 24 | CENTER PITCH- AND CROSS-LEVEL BUBBLES | 100.00 | 2.99 | 2.99 | 5.99 | |
| 25 | CORRECT FOR DISPLACEMENT WHEN VERTICAL RETICLE IS DISPLACED | 100.00 | 2.97 | 2.97 | 8.96 | |
| *18 | CHECKS THAT PITCH- AND CROSS-LEVEL BUBBLES ARE CENTERED | 100.00 | 2.97 | 2.97 | 11.92 | |
| 15 | IDENTIFY AIMING POINT THROUGH TELESCOPE | 100.00 | 2.95 | 2.95 | 14.88 | 5 |
| *21 | SET AND LAY FOR DEFLECTION | 96.50 | 2.99 | 2.88 | 17.76 | |
| 14 | LAY HOWITZER FOR DIRECTION | 96.50 | 2.97 | 2.87 | 20.63 | |
| 17 | TRAVERSE CAB UNTIL RETICLE PATTERN OF TELESCOPE IS CENTERED | 96.50 | 2.97 | 2.87 | 23.50 | |
| 16 | SET ANNOUNCED DEFLECTION ON AZIMUTH COUNTER | 100.00 | 2.86 | 2.86 | 26.36 | |
| 30 | PREPARE PANORAMIC TELESCOPE FOR DIRECT LAYING | 100.00 | 2.86 | 2.86 | 29.22 | 10 |
| 19 | DIRECT ALIGNMENT OF AIMING POSTS AND/OR COLLIMATOR | 96.50 | 2.95 | 2.85 | 32.07 | |
| 12 | LEVEL TELESCOPE MOUNT | 96.50 | 2.90 | 2.84 | 34.91 | |
| 34 | MAINTAIN SIGHT PICTURE BY CONTINUOUS TRACKING OF TARGET | 100.00 | 2.83 | 2.83 | 37.74 | |
| 33 | TRAVERSE HOWITZER UNTIL VERTICAL RETICLE IS CENTERED ON TARG | 100.00 | 2.83 | 2.83 | 40.57 | |
| 20 | LAY ON ALTERNATE AIMING POINT | 96.50 | 2.92 | 2.82 | 43.39 | 15 |
| 22 | SET ANNOUNCED DEFLECTION ON RESET COUNTER | 96.50 | 2.92 | 2.82 | 46.21 | |
| 11 | SET AZIMUTH COUNTER TO 3200 MILS | 96.50 | 2.88 | 2.78 | 48.99 | |
| 13 | TEST AND ALIGN (BORESIGHT) FIRE CONTROL EQUIPMENT | 96.50 | 2.83 | 2.73 | 51.72 | |
| 23 | TRAVERSE PIECE UNTIL VERTICAL RETICLE OF TELESCOPE IS ON LEF | 96.50 | 2.78 | 2.68 | 54.40 | |
| 36 | TURN AZIMUTH KNOB IN 5-MIL INCREMENTS TO SET LEAD CHANGES AS | 96.50 | 2.73 | 2.64 | 57.04 | 20 |
| 7 | CHECK FUNCTIONING OF TRAVERSING MECHANISM | 100.00 | 2.63 | 2.63 | 59.67 | |
| 29 | REFER PIECE | 89.63 | 2.90 | 2.60 | 62.27 | |
| 10 | UNCOVER AZIMUTH 6400-MIL COUNTER AND ZERO GUNNER'S AID COUNT | 96.50 | 2.66 | 2.56 | 64.84 | |
| 32 | SET INITIAL LEAD ON AZIMUTH COUNTER | 96.50 | 2.65 | 2.56 | 67.40 | |
| 40 | CENTER CROSS-LEVEL BUBBLE ON THE PANORAMIC TELESCOPE MOUNT* | 86.19 | 2.84 | 2.45 | 69.85 | 25 |
| 28 | ELEVATE TUBE UNTIL ELEVATION-LEVEL BUBBLE IS CENTERED* | 89.63 | 2.68 | 2.40 | 72.24 | |
| 4 | CHECK EQUILIBRATOR FLUID LEVEL | 93.06 | 2.51 | 2.34 | 74.58 | |
| 2 | PLACE CAB POWER SWITCH TO ON | 89.63 | 2.59 | 2.32 | 76.90 | |
| 26 | PLACE GUNNER'S ELEVATING CONTROL SWITCH TO GUNNER* | 93.06 | 2.49 | 2.32 | 79.22 | |
| 3 | SELECT NO. 1 GUNNER FOR POWER ELEVATION | 93.06 | 2.43 | 2.26 | 81.48 | 30 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
ASSISTANT GUNNER

WEAPON CODE = 5  POSITION =3  TASKS =27  MEMBERS = 23

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 17 | CALLS "SET" WHEN PIECE HAS BEEN LAID FOR RANGE | 100.00 | 5.09 | 5.09 | 5.09 | |
| 21 | PREPARE DIRECT FIRE TELESCOPE | 100.00 | 5.06 | 5.06 | 10.15 | |
| 16 | INSURE BUBBLES ARE CENTERED | 100.00 | 5.03 | 5.03 | 15.19 | |
| 18 | PLACE TUBE AT LOADING POSITION AFTER EACH ROUND IS FIRED, OF | 100.00 | 5.02 | 5.02 | 20.21 | |
| * 12 | SET ANNOUNCED QUADRANT ON ELEVATION COUNTER WITH ELEVATION K | 100.00 | 4.92 | 4.92 | 25.13 | 5 |
| 7 | CHECK DIRECT FIRE TELESCOPE | 100.00 | 4.89 | 4.89 | 30.03 | |
| 27 | ELEVATE OR DEPRESS PIECE UNTIL APPROPRIATE RANGE LINE IS ON | 100.00 | 4.76 | 4.76 | 34.79 | |
| 4 | INSURE CROSS LEVEL BUBBLE IS CENTERED | 95.63 | 4.96 | 4.75 | 39.53 | |
| 14 | ELEVATE PIECE TO ANNOUNCED QUADRANT AFTER LOADING | 95.63 | 4.92 | 4.71 | 44.24 | |
| 24 | ELEVATE OR DEPRESS PIECE UNTIL TARGET IS ON APPROPRIATE RANG | 100.00 | 4.64 | 4.64 | 48.88 | 10 |
| 15 | INSURE APPROPRIATE SETTINGS ON ELEVATING QUADRANT | 91.25 | 5.05 | 4.61 | 53.50 | |
| 13 | PLACE TUBE AT LOADING POSITION, DEPENDING ON TYPE OF RAMMER | 100.00 | 4.46 | 4.46 | 57.96 | |
| 3 | DEPRESS OR ELEVATE TUBE TO LOADING ELEVATION | 91.25 | 4.42 | 4.03 | 61.99 | |
| 2 | CHECK FUNCTIONING OF ELEVATING MECHANISMS | 86.94 | 4.64 | 4.03 | 66.02 | |
| 1 | ELEVATE TUBE CLEAR OF HOWITZER TRAVELING LOCK | 91.25 | 4.17 | 3.81 | 69.83 | 15 |
| 26 | MAINTAIN TARGET ON APPROPRIATE RANGE LINE BY CONTINUOUS TRAC | 78.25 | 4.23 | 3.31 | 73.14 | |
| 22 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 86.94 | 3.67 | 3.19 | 76.34 | |
| 25 | CHECK LEVEL VIAL MIRROR AND ADJUST FOR QUAD TO CENTER BUBBLE | 82.56 | 3.74 | 3.09 | 79.42 | |
| 10 | CENTER QUAD CORRECTION BUBBLE | 78.25 | 3.78 | 2.96 | 82.38 | |
| 23 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 82.56 | 3.41 | 2.82 | 85.20 | 20 |
| 5 | SET CORRECTION COUNTER TO ZERO | 65.19 | 3.65 | 2.38 | 87.58 | |
| 6 | ASSIST CHIEF OF SECTION IN MEASURING SITE TO CREST | 65.19 | 3.54 | 2.32 | 89.90 | |
| 8 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 73.88 | 3.00 | 2.22 | 92.12 | |
| 19 | CLEAN OBTURATOR VENT AND PRIMER SEAT | 56.50 | 3.84 | 2.17 | 94.29 | |
| 9 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 60.81 | 3.25 | 1.98 | 96.26 | 25 |
| 11 | VERIFY THAT ELEVATION AND AZIMUTH SLIP SCALES ARE SET AT 0 | 60.81 | 3.18 | 1.93 | 98.20 | |
| 20 | SWAB OUT BORE, WASH POWDER RESIDUE FROM OBTURATOR HEAD, THE | 47.81 | 3.77 | 1.80 | 100.00 | 27 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
NO. 1 CANNONEER

WEAPON CODE = 5  POSITION =4  TASKS =18  MEMBERS = 24

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 9 | PLACE PROJECTILE IN LOADING TRAY OF POWER RAMMER | 95.81 | 7.45 | 7.14 | 7.14 | |
| 6 | PROCURE PRIMERS AND PLACE IN CONVENIENT LOCATIO' | 95.81 | 7.29 | 6.99 | 14.13 | |
| 14 | INSERT PRIMER IN PRIMER CHAMBER, CLOSE BLOCK ASSEMBLY, AND P | 95.81 | 7.08 | 6.78 | 20.91 | |
| * 4 | INSPECT, OPERATE, AND CLEAN BREECH BLOCK, RAMMER, CHAMBER, A | 95.81 | 6.85 | 6.56 | 27.48 | |
| 16 | FIRE HOWITZER ON COMMAND | 95.81 | 6.81 | 6.53 | 34.00 | 5 |
| 3 | OPERATE FIRING MECHANISM | 95.81 | 6.45 | 6.18 | 40.18 | |
| 12 | PLACE PROPELLANT CHARGE IN CHAMBER | 91.63 | 6.66 | 6.11 | 46.29 | |
| 15 | ATTACH FIRING LANYARD TO FIRING MECHANISM LEVER | 95.81 | 6.37 | 6.10 | 52.39 | |
| 5 | PROCURE SPONGE, BURLAP, AND BUCKET OF WATER AND PLACE IN CON | 100.00 | 6.06 | 6.06 | 58.46 | |
| 8 | RELEASE RAMMER CYLINDER LATCH | 91.63 | 6.53 | 5.98 | 64.44 | 10 |
| 11 | RETURN RAMMER TO STOWED POSITION | 91.63 | 6.44 | 5.90 | 70.34 | |
| 17 | SWAB AND INSPECT THE POWDER CHAMBER | 95.81 | 6.04 | 5.79 | 76.13 | |
| 10 | MOVE RAMMER CYLINDER TO RAM POSITION | 87.50 | 6.46 | 5.65 | 81.78 | |
| 13 | COMMAND "CLOSE" AND CLOSE THE BREECH | 91.63 | 6.06 | 5.55 | 87.33 | |
| 7 | LOWER RAMMER TO OPERATING POSITION | 83.31 | 4.98 | 4.15 | 91.48 | 15 |
| 1 | OPEN REAR TURRET DOORS | 75.00 | 3.90 | 2.93 | 94.40 | |
| 2 | REMOVE LEFT SPADE STRUT SAFETY PIN, RELEASE LOCKING LATCH, A | 58.31 | 4.91 | 2.86 | 97.27 | |
| 18 | CALL OUT NUMBER AND QUADRANT FOR EACH ROUND IN VOLLEY FIRE | 62.50 | 4.37 | 2.73 | 100.00 | 18 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
CANNONEERS NOS. 2-6 AND DRIVER

WEAPON CODE = 5 POSITION =5 TASKS =54 MEMBERS = 40

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 10 | UNLOAD AND ARRANGE PROJECTILES | 82.50 | 3.56 | 2.94 | 2.94 | |
| 2 | BACK CARRIAGE AGAINST SPADES | 67.50 | 4.23 | 2.86 | 5.80 | |
| 6 | ASSIST NO. 4 AND 5 IN UNLOADING AND ARRANGING AMMUNITION | 82.50 | 3.08 | 2.54 | 8.34 | |
| 17 | REMOVE MUZZLE PLUG | 77.50 | 3.23 | 2.50 | 10.84 | |
| 23 | LOWER AND SECURE HOWITZER TRAVELING LOCK | 70.00 | 3.48 | 2.43 | 13.27 | 5 |
| 5 | UNLOAD AND ARRANGE EQUIPMENT AS DIRECTED BY THE CHIEF OF SEC | 87.50 | 2.75 | 2.41 | 15.68 | |
| 31 | INSPECT AND CLEAN PROJECTILES | 80.00 | 2.94 | 2.35 | 18.03 | |
| 21 | SET OUT AIMING POSTS | 82.50 | 2.83 | 2.33 | 20.36 | |
| 25 | UNLOAD AIMING POSTS, RAMMER STAFF SECTIONS AND PIONEER EQUIP | 87.50 | 2.66 | 2.33 | 22.69 | |
| 32 | CARRY PROJECTILE TO HOWITZER | 77.50 | 2.88 | 2.23 | 24.92 | 10 |
| 48 | SELECT PROPER PROJECTILE | 80.00 | 2.75 | 2.20 | 27.12 | |
| 8 | SET BRAKE AND STOP ENGINE | 57.50 | 3.82 | 2.20 | 29.32 | |
| 7 | DROP THE RIGHT SPADE | 75.00 | 2.88 | 2.16 | 31.48 | |
| 16 | UNLOAD FUZE BOXES AND OPEN AND ARRANGE FUZES | 87.50 | 2.46 | 2.15 | 33.63 | |
| 34 | ASSIST NO. 3 AND 4 IN PREPARING AMMUNITION | 82.50 | 2.59 | 2.13 | 35.76 | 15 |
| 11 | UNLOAD AND ARRANGE PROPELLING CHARGES | 80.00 | 2.64 | 2.11 | 37.88 | |
| 43 | EXAMINE ENTIRE PROJECTILE FOR DEFECTS | 80.00 | 2.62 | 2.09 | 39.97 | |
| 35 | INSPECT FUZE WELL FOR RUST AND DIRT | 82.50 | 2.52 | 2.08 | 42.05 | |
| 9 | ASSIST NO. 2 IN UNLOADING FUZE BOXES AND OPENING AND ARRANGI | 82.50 | 2.51 | 2.07 | 44.12 | |
| 42 | ATTACH DESIGNATED FUZE | 80.00 | 2.55 | 2.04 | 46.16 | 20 |
| 39 | REMOVE GROMMET AND EXAMINE ROTATING BAND FOR DIRT OR BURRS | 72.50 | 2.81 | 2.04 | 48.20 | |
| 13 | PROCURE FUZE SETTER | 70.00 | 2.89 | 2.03 | 50.23 | |
| 27 | PLACE INSTRUMENT PANEL INSIDE DRIVER'S COMPARTMENT AND CLOSE | 60.00 | 3.37 | 2.02 | 52.25 | |
| 30 | ASSIST NO. 5 IN PREPARING THE PROPELLANT CHARGE | 80.00 | 2.47 | 1.98 | 54.23 | |
| 28 | SECURE DRIVER'S HATCH | 57.50 | 3.43 | 1.97 | 56.20 | 25 |
| 18 | EMPLACE AND HOLD TESTING TARGET | 85.00 | 2.23 | 1.90 | 58.10 | |
| 40 | PLACE PROJECTILE NEAR NO. 1 | 72.50 | 2.61 | 1.89 | 59.99 | |
| 14 | ASSEMBLE AIMING POSTS OR COLLIMATOR | 80.00 | 2.28 | 1.82 | 61.81 | |
| 49 | STAND PROJECTILE ON END AND CLEAN THOROUGHLY | 75.00 | 2.29 | 1.71 | 63.53 | |
| 52 | HOLD PROJECTILE WHILE NO. 2 FUZES AND SETS FUZE | 75.00 | 2.27 | 1.70 | 65.23 | 30 |

DRAGON 155MM SP HOWITZER JOB ANALYSIS
CANNONEERS NOS. 2-6 AND DRIVER

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 46 | PREPARE AND VERIFY CORRECT CHARGE | 67.50 | 2.49 | 1.68 | 66.92 | |
| 38 | SELECT CHARGE DESIGNATED BY XO | 65.00 | 2.58 | 1.68 | 68.60 | |
| 50 | SET TIME FUZES USING APPROPRIATE FUZE SETTER | 67.50 | 2.47 | 1.67 | 70.24 | |
| 4 | ASSIST NO. 3 IN PREPARING PAULIN | 77.50 | 2.15 | 1.66 | 71.93 | |
| 26 | ASSEMBLE RAMMER STAFF AND HEAD | 72.50 | 2.29 | 1.66 | 73.59 | 35 |
| 3 | REMOVE PAULIN FROM CAB STORAGE RACK AND SPREAD ON GROUND | 75.00 | 2.20 | 1.65 | 75.24 | |
| 45 | TIE REMAINING BAGS TOGETHER | 65.00 | 2.53 | 1.65 | 76.89 | |
| 36 | HAND THE PROPELLANT CHARGE TO NO. 1 | 70.00 | 2.33 | 1.63 | 78.52 | |
| 19 | ASSIST NO. 1 IN INSPECTING AND CLEANING THE BREECH BLOCK, CH | 62.50 | 2.58 | 1.61 | 80.13 | |
| 12 | LAY COMMUNICATION CABLE FROM HOWITZER TO XM-155/GT | 72.50 | 2.18 | 1.58 | 81.71 | 40 |
| 33 | PREPARE PROPELLANT CHARGE | 70.00 | 2.22 | 1.56 | 83.27 | |
| 37 | VERIFY THAT PROJECTILE IS TYPE DESIGNATED IN COMMAND | 72.50 | 2.13 | 1.54 | 84.81 | |
| 41 | REMOVE COMPLETE CHARGE FROM CONTAINER, PLACING BASE CHARGE O | 65.00 | 2.25 | 1.46 | 86.28 | |
| 15 | PREPARE TELEPHONE FOR USE AND CHECK OPERATION | 70.00 | 2.08 | 1.46 | 87.73 | |
| 1 | OPEN REAR HULL DOORS | 77.50 | 1.76 | 1.34 | 89.09 | 45 |
| 24 | RAISE AND SECURE BALLISTIC COVER | 60.00 | 2.24 | 1.34 | 90.44 | |
| 53 | SET SUPERQUICK AND DELAY FUZES WITH FUZE WRENCH | 70.00 | 1.91 | 1.34 | 91.78 | |
| 44 | REMOVE PROPELLANTS NOT REQUIRED | 62.50 | 2.10 | 1.31 | 93.09 | |
| 51 | REMOVE IGNITER PROTECTOR CAP FROM BASE CHARGE | 55.00 | 2.30 | 1.26 | 94.35 | |
| 22 | PLACE VENT CLEANING EQUIPMENT IN A CONVENIENT LOCATION | 62.50 | 2.00 | 1.25 | 95.60 | 50 |
| 20 | OPEN AND LOCK DIRECT FIRE TELESCOPE WINDOW | 62.50 | 1.98 | 1.23 | 96.84 | |
| 54 | READ AND ANNOUNCE TIME SET ON FUZE | 65.00 | 1.83 | 1.19 | 98.03 | |
| 47 | REMOVE SAFETY PULL WIRE FROM TIME FUZES | 47.50 | 2.11 | 1.00 | 99.03 | |
| 29 | REMOVE LIFTING PLUG | 52.50 | 1.85 | 0.97 | 100.00 | 54 |

DRAGON 81MM MORTAR JOB ANALYSIS
SQUAD LEADER

WEAPON CODE = 1  POSITION =1  TASKS = 5  MEMBERS = 45

ORDERED BY.....COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS
AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 4 | SPOT CHECK SETTINGS PLACED ON SIGHT | 100.00 | 24.06 | 24.06 | 24.06 | |
| 5 | SPOT CHECK LAY OF MORTAR | 100.00 | 22.89 | 22.89 | 46.95 | |
| 3 | RELAY/RECORD FIRE COMMANDS | 95.50 | 20.28 | 19.38 | 66.32 | |
| 1 | DESIGNATE EXACT LOCATION MORTAR IS TO BE MOUNTED | 100.00 | 18.70 | 18.70 | 85.02 | |
| 2 | INDICATE INITIAL DIRECTION OF FIRE | 95.50 | 15.68 | 14.98 | 100.00 | 5 |

DRAGON PIMM MORTAR JOB ANALYSIS
GUNNER

WEAPON CODE = 1  POSITION =2  TASKS =33  MEMBERS = 49

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | | **** | | N |
|---|---|---|---|---|---|---|
| *14 | SET SIGHT FOR DEFLECTION AND ELEVATION ANNOUNCED IN FIRE COM | 97.94 | 3.79 | 3.71 | 3.71 | |
| *11 | LAY MORTAR FOR INITIAL DIRECTION AND ELEVATION | 97.94 | 3.75 | 3.67 | 7.39 | |
| 33 | ASSIST IN MAINTAINING MORTAR | 100.00 | 3.64 | 3.64 | 11.03 | |
| * 9 | ADJUST SIGHT FOR INITIAL LAY ON AIMING POSTS | 100.00 | 3.63 | 3.63 | 14.66 | |
| * 4 | MOUNT SIGHT ON MORTAR | 97.94 | 3.63 | 3.55 | 18.21 | 5 |
| *30 | REMOVE SIGHT FROM MORTAR BEFORE DISMOUNTING OF MORTAR | 100.00 | 3.49 | 3.49 | 21.70 | |
| 32 | PARTICIPATE IN DISMOUNTING MORTAR | 100.00 | 3.49 | 3.49 | 25.19 | |
| *20 | MANIPULATE TRAVERSING MECHANISM TO DELIVER TRAVERSING FIRE | 100.00 | 3.46 | 3.46 | 28.65 | |
| *10 | DIRECT POSITIONING OF AIMING POSTS | 97.94 | 3.49 | 3.42 | 32.07 | |
| 31 | REPLACE SIGHT IN SIGHT CASE | 100.00 | 3.39 | 3.39 | 35.46 | 10 |
| * 3 | PARTICIPATE IN MOUNTING MORTAR | 97.94 | 3.40 | 3.33 | 38.79 | |
| 12 | PERFORM BEFORE-FIRING SAFETY CHECKS ON MORTAR | 95.88 | 3.36 | 3.23 | 42.02 | |
| 13 | REPEAT FIRE COMMAND ISSUED BY FDC OR FO | 97.94 | 3.26 | 3.19 | 45.21 | |
| 17 | LAY MORTAR IN ACCORDANCE WITH SETTING PREVIOUSLY SET ON SIGH | 93.88 | 3.37 | 3.16 | 48.37 | |
| 5 | CALIBRATE SIGHT FOR ELEVATION USING M45 BORESIGHT | 95.88 | 3.29 | 3.15 | 51.53 | 15 |
| 21 | MANIPULATE ELEVATING MECHANISM TO DELIVER SEARCHING FIRE | 97.94 | 3.20 | 3.13 | 54.66 | |
| 2 | PERFORM PRE-MOUNT CHECKS ON MOUNT | 95.88 | 3.19 | 3.06 | 57.72 | |
| 15 | SET SIGHT FOR DEFLECTION AND ELEVATION CHANGES DIRECTED BY F | 85.69 | 3.55 | 3.05 | 60.77 | |
| 22 | PARTICIPATE IN PARALLEL LAYING OF PLATOON MORTARS | 95.88 | 3.16 | 3.03 | 63.80 | |
| 18 | CHANGE LAY OF MORTAR IN ACCORDANCE WITH MODIFIED SUBSEQUENT | 89.75 | 3.36 | 3.01 | 66.81 | 20 |
| 29 | LAY MORTAR FOR FINAL PROTECTIVE FIRE (FPF) DEFLECTION AND EL | 93.88 | 3.19 | 2.99 | 69.81 | |
| 28 | ASSIST ASSISTANT GUNNER IN REMOVING MISFIRE | 87.75 | 3.40 | 2.99 | 72.79 | |
| 8 | CALIBRATE SIGHT FOR DEFLECTION BY AIMING CIRCLE METHOD | 91.81 | 3.16 | 2.90 | 75.70 | |
| 7 | CALIBRATE SIGHT FOR DEFLECTION USING M45 BORESIGHT | 93.88 | 3.06 | 2.88 | 78.57 | |
| 19 | MANIPULATE ELEVATING MECHANISM AS REQUIRED TO ADJUST FIRE BY | 95.88 | 2.95 | 2.83 | 81.40 | 25 |
| 25 | REMOVE SIGHT BEFORE FIRING, UNTIL BASEPLATE IS SETTLED | 87.75 | 3.20 | 2.80 | 84.20 | |
| 26 | CORRECT FOR DISPLACEMENT OF MOUNT DUE TO SHOCK OF FIRING | 87.75 | 3.09 | 2.72 | 86.92 | |
| 23 | DIRECT LAY MORTAR | 89.75 | 2.96 | 2.66 | 89.58 | |
| 24 | MOVE MOUNT AND BARREL TO MAKE LARGE DEFLECTION OR ELEVATION | 87.75 | 2.75 | 2.41 | 91.99 | |
| 27 | ATTEMPT TO FIRE MISFIRE | 73.44 | 3.21 | 2.36 | 94.35 | |

DRAGON 81MM MORTAR JOB ANALYSIS
GUNNER

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 1 | CARRY MORTAR MOUNT | 85.69 | 2.54 | 2.17 | 96.52 | |
| 6 | CALIBRATE SIGHT FOR ELEVATION USING M2 COMPASS | 79.56 | 2.29 | 1.82 | 98.34 | |
| 16 | DETERMINE, BY REFERENCE TO FIRING TABLE, ELEVATION AND CHARG | 67.31 | 2.46 | 1.66 | 100.00 | 32 |

DRAGON 81MM MORTAR JOB ANALYSIS
ASSISTANT GUNNER

WEAPON CODE = 1  POSITION =3  TASKS =13  MEMBERS = 29

COUNT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.....
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| *6 | LOAD ROUND INTO BARREL | 100.00 | 9.64 | 9.64 | 9.64 | |
| 13 | ASSIST IN MAINTAINING MORTAR | 100.00 | 8.65 | 8.65 | 18.29 | |
| *10 | ASSIST GUNNER IN MOVING MOUNT AND BARREL WHEN LARGE DEFLECTI | 93.06 | 8.89 | 8.27 | 26.57 | |
| 2 | PARTICIPATE IN MOUNTING MORTAR | 96.50 | 8.43 | 8.14 | 34.70 | |
| 3 | PERFORM BEFORE-FIRING SAFETY CHECK ON BARREL | 100.00 | 8.13 | 8.13 | 42.84 | 5 |
| 1 | PERFORM PRE-MOUNT CHECKS ON BARREL | 100.00 | 7.97 | 7.97 | 50.81 | |
| 12 | ASSIST IN DISMOUNTING MORTAR | 96.50 | 8.01 | 7.73 | 58.54 | |
| 5 | CHECK ROUND RECEIVED FROM 1ST AMMUNITION HANDLER FOR PROPER | 96.50 | 7.91 | 7.63 | 66.17 | |
| 11 | SWAB BARREL BORE ON COMPLETION OF FIRE MISSION | 93.06 | 8.09 | 7.53 | 73.70 | |
| 7 | SWAB BARREL BORE AFTER EACH 10 ROUNDS FIRED | 100.00 | 7.46 | 7.46 | 81.16 | 10 |
| 8 | ASSIST GUNNER IN REMOVING MISFIRE | 89.63 | 7.77 | 6.97 | 88.13 | |
| 4 | SWAB BARREL BORE BEFORE FIRING BEGINS | 89.63 | 6.93 | 6.21 | 94.34 | |
| 9 | PASS MISFIRED ROUND TO 1ST AMMUNITION HANDLER | 89.63 | 6.31 | 5.66 | 100.00 | 13 |

DRAGON 81MM MORTAR JOB ANALYSIS
1ST AMMUNITION HANDLER

WEAPON CODE = 1  POSITION =4  TASKS =17  MEMBERS = 7

ORDERED BY.....COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | **** % | % | N |
|---|---|---|---|---|---|---|
| 4 | PERFORM BEFORE-FIRING SAFETY CHECKS ON ROUND | 100.00 | 7.30 | 7.30 | 7.30 | |
| 6 | PREPARE ROUND FOR FIRING | 100.00 | 7.30 | 7.30 | 14.60 | |
| 17 | ASSIST IN MAINTAINING MORTAR | 100.00 | 7.17 | 7.17 | 21.78 | |
| 7 | A'. REMOVE UNNEEDED INCREMENTS | 100.00 | 7.07 | 7.07 | 28.85 | |
| 5 | REPEAT CHARGE ANNOUNCED BY GUNNER OR FDC | 100.00 | 6.63 | 6.63 | 35.48 | 5 |
| 10 | D'. REMOVE SAFETY WIRES | 100.00 | 6.57 | 6.57 | 42.04 | |
| 15 | COLLECT UNUSED INCREMENTS FOR LATER DISPOSAL | 100.00 | 6.41 | 6.41 | 48.45 | |
| 9 | C'. SET FUSE | 100.00 | 6.37 | 6.37 | 54.82 | |
| 11 | PASS PREPARED ROUND TO ASSISTANT GUNNER | 100.00 | 6.34 | 6.34 | 61.16 | |
| 2 | POSITION BASEPLATE FOR MORTAR MOUNTING | 100.00 | 5.99 | 5.99 | 67.15 | 10 |
| 1 | PERFORM PRE-MOUNT CHECKS ON BASEPLATE | 100.00 | 5.99 | 5.99 | 73.14 | |
| 3 | PREPARE BASEPLATE FOR MORTAR MOUNTING | 100.00 | 5.58 | 5.58 | 78.72 | |
| 8 | B'. INSTALL PROXIMITY FUSE - IF REQUIRED | 85.69 | 6.09 | 5.22 | 83.95 | |
| 14 | RESTORE ROUND PREPARED BUT NOT FIRED TO ORIGINAL CONDITION | 85.69 | 6.06 | 5.19 | 89.14 | |
| 16 | RETRIEVE BASEPLATE AFTER MORTAR DISMOUNTED | 100.00 | 5.19 | 5.19 | 94.33 | 15 |
| 12 | INSPECT MISFIRED ROUND FOR CAUSE OF MISFIRE | 85.69 | 3.31 | 2.83 | 97.17 | |
| 13 | DISPOSE OF MISFIRED ROUND | 85.69 | 3.31 | 2.83 | 100.00 | 17 |

DRAGON 81MM MORTAR JOB ANALYSIS
2ND AMMUNITION HANDLER

WEAPON CODE = 1  POSITION =5  TASKS = 4  MEMBERS = 16

POINT OF TASKS LISTED.....
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALLMEMBERS.....
ORDERED BY.....AVERAGE PERCENT PART OF JOB BY ALL MEMBERS.....
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING.....
PERCENT OF MEMBERS PERFORMING.....

| TASK | TASK TITLE | % | % | % **** | % | N |
|---|---|---|---|---|---|---|
| 2 | MAINTAIN AMMUNITION | 100.00 | 38.53 | 38.53 | 38.53 | |
| 4 | PERFORM DUTIES OF 1ST AMMUNITION HANDLER | 93.75 | 24.59 | 23.05 | 61.58 | |
| 1 | POSITION AIMING POSTS AS DIRECTED BY GUNNER | 93.75 | 20.89 | 19.58 | 81.16 | |
| 3 | RETRIEVE AIMING POSTS | 93.75 | 20.09 | 18.84 | 100.00 | 4 |

APPENDIX E

# RANKED TASK INVENTORIES FOR THE

M60A2 TANK
M551 AR/AAV
105MM HOWITZER (TOWED)
155MM HOWITZER (TOWED)
8-INCH HOWITZER (SP)
4.2-INCH MORTAR

TANK COMMANDER

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 9 | ANNOUNCE AN INITIAL FIRE COMMAND. | 100.00 | 3.61 | 3.61 | 3.61 | |
| 11 | LAY THE MAIN GUN FOR DIRECTION. | 100.00 | 3.61 | 3.61 | 7.22 | |
| 12 | ANALYZE A TARGET RAPIDLY AND SELECT BEST AVAILABLE AMMUNITION | 100.00 | 3.61 | 3.61 | 10.83 | |
| 17 | PLACE THE RANGE FINDER IN OPERATION. | 100.00 | 3.61 | 3.61 | 14.44 | |
| 18 | RANGE ON A TARGET, UTILIZING THE RANGE FINDER. | 100.00 | 3.61 | 3.61 | 18.05 | 5 |
| 20 | ANNOUNCE RANGE WHEN RANGE FINDER CANNOT MECHANICALLY TRANSMIT | 100.00 | 3.61 | 3.61 | 21.66 | |
| 3 | LOAD AND CHARGE THE CUPOLA MACHINEGUN (50 CAL). | 100.00 | 3.34 | 3.34 | 25.00 | |
| 4 | PREPARE TO FIRE THE CUPOLA MACHINEGUN. | 100.00 | 3.34 | 3.34 | 28.34 | |
| 5 | FIRE THE CUPOLA MACHINEGUN. | 100.00 | 3.34 | 3.34 | 31.68 | |
| 7 | UNLOAD A RUPTURED CARTRIDGE CASE FROM THE CUPOLA MACHINEGUN. | 100.00 | 3.34 | 3.34 | 35.02 | 10 |
| 10 | TURN ON THE XEON SEARCHLIGHT. | 100.00 | 3.34 | 3.34 | 38.36 | |
| 14 | PROVIDE GUIDANCE TO THE GUNNER FOR LAYING THE MAIN GUN FOR D | 100.00 | 3.34 | 3.34 | 41.71 | |
| 41 | OPERATE HEADSET AND CHEST SET. | 100.00 | 3.34 | 3.34 | 45.05 | |
| 45 | BORESIGHT AND ZERO THE 50 CAL MACHINEGUN. | 100.00 | 3.34 | 3.34 | 48.39 | |
| 46 | BORESIGHT AND ZERO THE MAIN GUN. | 100.00 | 3.34 | 3.34 | 51.73 | 15 |
| 6 | UNLOAD THE CUPOLA MACHINEGUN. | 100.00 | 3.13 | 3.13 | 54.85 | |
| 15 | RELEASE CONTROL OF TURRET TO GUNNER UPON HEARING IDENTIFIED | 100.00 | 3.07 | 3.07 | 57.93 | |
| 43 | FIRE FROM A RANGE CARD. | 100.00 | 3.07 | 3.07 | 61.00 | |
| 48 | OPERATE TANK COMMANDER'S INFRARED CONTROLS AND EQUIPMENT. | 100.00 | 3.07 | 3.07 | 64.07 | |
| 47 | SELECT FIRING POSITIONS. | 100.00 | 2.75 | 2.75 | 66.82 | 20 |
| 13 | DESIGNATE SPECIFIC TARGET WHEN MORE THAN ONE IS OBSERVED. | 66.67 | 3.80 | 2.53 | 69.35 | |
| 22 | IDENTIFY TARGET PROVIDED BY THE PLATOON LEADER. | 100.00 | 2.48 | 2.48 | 71.84 | |
| 23 | INSPECT FOR SAFETY OF CREW BEFORE TRAVERSING TURRET. | 100.00 | 2.48 | 2.48 | 74.32 | |
| 33 | DISTINGUISH BETWEEN FRIENDLY AND ENEMY PERSONNEL AND MATERIAL | 66.67 | 3.63 | 2.42 | 76.74 | |
| 1 | PLACE THE TURRET CUPOLA INTO POWER OPERATION. | 66.67 | 3.40 | 2.27 | 79.00 | 25 |
| 2 | DEACTIVATE THE TURRET CUPOLA FROM POWER OPERATION. | 66.67 | 3.40 | 2.27 | 81.27 | |
| 42 | PREPARE A RANGE CARD. | 66.67 | 3.40 | 2.27 | 83.53 | |
| 21 | IDENTIFY TARGET PROVIDED BY ANOTHER CREW MEMBER. | 100.00 | 2.21 | 2.21 | 85.75 | |
| 32 | ESTIMATE SPEED OF MOVING TARGETS. | 100.00 | 2.21 | 2.21 | 87.96 | |

TANK COMMANDER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 8 | RESPOND TO A CUPOLA MACHINEGUN MISFIRE. | 66.67 | 3.23 | 2.15 | 90.11 | 30 |
| 38 | ENGAGE TARGETS, UTILIZING ARTIFICIAL ILLUMINATION. | 66.67 | 2.82 | 1.88 | 91.99 | |
| 16 | MEASURE DEFLECTION SHIFT IN MILS, UTILIZING A REFERENCE POINT | 66.67 | 2.58 | 1.72 | 93.71 | |
| 44 | BORESIGHT AND ZERO THE COAXIAL MACHINEGUN. | 33.33 | 3.23 | 1.08 | 94.78 | |
| 37 | TROUBLESHOOT MALFUNCTIONS OF THE MAIN GUN. | 66.67 | 1.53 | 1.02 | 95.81 | |
| 40 | READ THE COMPUTER. | 33.33 | 2.58 | 0.86 | 96.67 | 35 |
| 31 | PERFORM THE NON-SENSING METHOD OF ADJUSTMENT. | 66.67 | 1.13 | 0.75 | 97.42 | |
| 19 | PURGE MAIN GUN HYDRAULIC SYSTEM. | 33.33 | 0.65 | 0.22 | 97.63 | |
| 24 | TURN ON APPROPRIATE GUN SWITCH. | 33.33 | 0.65 | 0.22 | 97.85 | |
| 25 | INDEX APPROPRIATE AMMUNITION. | 33.33 | 0.65 | 0.22 | 98.06 | |
| 26 | INDEX APPROPRIATE RANGE, IF REQUIRED. | 33.33 | 0.65 | 0.22 | 98.28 | 40 |
| 27 | APPLY MIL RELATION FORMULA. | 33.33 | 0.65 | 0.22 | 98.50 | |
| 28 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT, UTILIZING PE | 33.33 | 0.65 | 0.22 | 98.71 | |
| 29 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT, UTILIZING TE | 33.33 | 0.65 | 0.22 | 98.92 | |
| 30 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT AGAINST A MOV | 33.33 | 0.65 | 0.22 | 99.14 | |
| 34 | PREPARE TO FIRE COAXIAL MACHINEGUN. | 33.33 | 0.65 | 0.22 | 99.35 | 45 |
| 35 | FIRE COAXIAL MACHINEGUN. | 33.33 | 0.65 | 0.22 | 99.57 | |
| 36 | FIRE COAXIAL MACHINEGUN AT A MOVING TARGET. | 33.33 | 0.65 | 0.22 | 99.78 | |
| 39 | CHECK AZIMUTH INDICATOR FOR ACCURACY AND SLIPPAGE. | 33.33 | 0.65 | 0.22 | 100.00 | 48 |

M60A2

GUNNER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS. . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS. . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 4 | TURN ON APPROPRIATE GUN SWITCH. | 100.00 | 4.43 | 4.43 | 4.43 | |
| 5 | INDEX ANNOUNCED AMMUNITION. | 100.00 | 4.43 | 4.43 | 8.86 | |
| 9 | UPON RECEIPT OF RANGE ELEMENT OF THE FIRE COMMAND, MAKE A PR | 100.00 | 3.82 | 3.82 | 12.68 | |
| 7 | IDENTIFY THE TARGET. | 100.00 | 3.60 | 3.60 | 16.28 | |
| 1 | COMPLY WITH THE ELEMENTS OF A FIRE COMMAND. | 100.00 | 3.22 | 3.22 | 19.50 | 5 |
| 10 | APPLY THE INITIAL LEAD FOR A MOVING TARGET. | 100.00 | 3.22 | 3.22 | 22.72 | |
| 34 | BORESIGHT AND ZERO THE COAXIAL MACHINEGUN. | 100.00 | 3.22 | 3.22 | 25.93 | |
| 37 | ENGAGE TARGETS, USING ARTIFICIAL ILLUMINATION. | 100.00 | 3.22 | 3.22 | 29.15 | |
| 6 | LOOK THROUGH VISION BLOCK TO LOCATE THE TARGET. | 100.00 | 3.00 | 3.00 | 32.15 | |
| 14 | ANNOUNCE ON-THE-WAY AND FIRE. | 100.00 | 3.00 | 3.00 | 35.14 | 10 |
| 15 | IF UTILIZING TELESCOPIC SIGHT, SELECT PROPER RETICLE AS INDI | 100.00 | 3.00 | 3.00 | 38.14 | |
| 16 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT, UTILIZING THE | 100.00 | 3.00 | 3.00 | 41.13 | |
| 17 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT, UTILIZING THE | 100.00 | 3.00 | 3.00 | 44.13 | |
| 31 | PREPARE A RANGE CARD. | 100.00 | 3.00 | 3.00 | 47.13 | |
| 32 | FIRE FROM A RANGE CARD. | 100.00 | 3.00 | 3.00 | 50.12 | 15 |
| 3 | PLACE THE TURRET IN POWER OPERATION | 100.00 | 2.61 | 2.61 | 52.73 | |
| 26 | DISTINGUISH BETWEEN FRIENDLY AND ENEMY PERSONNEL AND MATERIAL | 100.00 | 2.61 | 2.61 | 55.34 | |
| 27 | UPON DETECTION OF ENEMY TARGET, PROVIDE TANK COMMANDER WITH | 100.00 | 2.61 | 2.61 | 57.95 | |
| 30 | ASSIST LOADER IN LOCATING THE DIFFICULTY WHEN THE GUN FAILS | 100.00 | 2.61 | 2.61 | 60.56 | |
| 33 | BORESIGHT AND ZERO THE MAIN GUN. | 100.00 | 2.61 | 2.61 | 60.56 | 20 |
| 12 | LOCATE DIRECTION OF TARGET BY REFERENCE POINT WHEN REQUIRED. | 100.00 | 2.55 | 2.55 | 65.73 | |
| 18 | APPLY TANK COMMANDER'S CORRECTIONS FOR ADJUSTING FIRE, UTILI | 100.00 | 2.39 | 2.39 | 68.12 | |
| 19 | APPLY TANK COMMANDER'S CORRECTIONS FOR ADJUSTING FIRE, UTILI | 100.00 | 2.39 | 2.39 | 70.51 | |
| 22 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT AGAINSTAA MOVING | 100.00 | 2.39 | 2.39 | 72.90 | |
| 23 | APPLY TANK COMMANDER'S CORRECTION FOR SUBSEQUENT ROUNDS AGAI | 100.00 | 2.39 | 2.39 | 75.29 | 25 |
| 24 | FIRE COAXIAL MACHINEGUN, USING INFINITY SIGHT IN THE VIEWING | 100.00 | 2.39 | 2.39 | 77.68 | |
| 25 | SEARCH FOR TARGETS THROUGH THE VIEWING WINDOW OF THE PERISCO | 100.00 | 2.39 | 2.39 | 80.07 | |
| 28 | ASSIST THE LOADER IF THE MAIN GUN FAILS TO LOAD | 100.00 | 2.39 | 2.39 | 82.46 | |
| 8 | POSITION THE PERISCOPE RETICLE TO FACILITATE RANGING. | 100.00 | 2.33 | 2.33 | 84.79 | |
| 29 | ASSIST TANK COMMANDER IN LOCATING THE DIFFICULTY WHEN THE GUN | 100.00 | 2.17 | 2.17 | 86.96 | 30 |

GUNNER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 35 | BORESIGHT THE SEARCHLIGHT | 100.00 | 2.17 | 2.17 | 89.13 | |
| 36 | EMPLOY INFRARED SIGHTS. | 100.00 | 2.17 | 2.17 | 91.30 | |
| 2 | ASSURE TURRET TRAVERSING AREA IS CLEAR OF PERSONNEL AND OBST | 66.67 | 3.00 | 2.00 | 93.31 | |
| 11 | TRAVERSE RAPIDLY IN THE ANNOUNCED DIRECTION AS INDICATED BY | 66.67 | 3.00 | 2.00 | 95.31 | |
| 13 | INDEX THE RANGE, IF REQUIRED. | 66.67 | 3.00 | 2.00 | 97.32 | 35 |
| 20 | APPLY NON-SENSING METHOD OF ADJUSTMENT, WHEN REQUIRED | 66.67 | 2.34 | 1.56 | 98.88 | |
| 21 | ESTIMATE SPEED OF MOVING TARGET. | 66.67 | 1.68 | 1.12 | 100.00 | 37 |

LOADER

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 30 | CHECK OPERATION OF THE INTERPHONE CONTROL BOX AND INTERPHONE | 100.00 | 4.95 | 4.95 | 4.95 | |
| 1 | IDENTIFY ALL TYPES OF TANK AMMUNITION | 100.00 | 4.92 | 4.92 | 9.87 | |
| 2 | AID TANK COMMANDER IN ACQUIRING TARGETS. | 100.00 | 4.50 | 4.50 | 14.37 | |
| 27 | MAINTAIN, INSTALL AND OPERATE HEADSET AND CHEST SET. | 100.00 | 4.48 | 4.48 | 18.86 | |
| 10 | DISASSEMBLE, MAINTAIN AND ASSEMBLE COAXIAL MACHINEGUN. | 100.00 | 4.45 | 4.45 | 23.31 | 5 |
| 11 | INSTALL COAXIAL MACHINEGUN. | 100.00 | 4.45 | 4.45 | 27.76 | |
| 16 | UNLOAD THE COAXIAL MACHINEGUN. | 100.00 | 4.45 | 4.45 | 32.22 | |
| 17 | STOW MAIN GUN AMMUNITION. | 100.00 | 3.96 | 3.96 | 36.17 | |
| 26 | UNLOCK, MAINTAIN AND LOCK GUN TRAVEL LOCK. | 100.00 | 3.51 | 3.51 | 39.69 | |
| 18 | STOW COAXIAL MACHINEGUN AMMUNITION. | 100.00 | 3.46 | 3.46 | 43.14 | 10 |
| 31 | ENTER PRESCRIBED RADIO NET. | 100.00 | 3.09 | 3.09 | 46.24 | |
| 9 | REMOVE COAXIAL MACHINEGUN. | 100.00 | 2.96 | 2.96 | 49.20 | |
| 12 | BORESIGHT COAXIAL MACHINEGUN. | 100.00 | 2.96 | 2.96 | 52.16 | |
| 13 | LOAD COAXIAL MACHINEGUN. | 100.00 | 2.96 | 2.96 | 55.12 | |
| 14 | TAKE IMMEDIATE ACTION IN CASE OF A STOPPAGE OF THE MACHINEGUN | 100.00 | 2.96 | 2.96 | 58.08 | 15 |
| 15 | TAKE IMMEDIATE ACTION IN CASE OF A RUNAWAY COAXIAL MACHINEGUN | 100.00 | 2.96 | 2.96 | 61.04 | |
| 24 | CHECK TURRET BLOWER. | 100.00 | 2.75 | 2.75 | 63.79 | |
| 29 | READ REPLENISHER TAPE. | 100.00 | 2.52 | 2.52 | 66.31 | |
| 19 | UNLOAD A MAIN GUN ROUND FOR WHICH NO ATTEMPT HAS BEEN MADE TO | 100.00 | 2.49 | 2.49 | 68.80 | |
| 20 | UNLOAD A ROUND OR CARTRIDGE CASE THAT DOES NOT AUTOMATICALLY | 100.00 | 2.49 | 2.49 | 71.29 | 20 |
| 21 | UNLOAD A ROUND BY USE OF RAMMING AND EXTRACTING TOOL. | 100.00 | 2.49 | 2.49 | 73.78 | |
| 22 | UNLOAD A STUCK PROJECTILE WHEN SEPARATED FROM THE CARTRIDGE | 100.00 | 2.49 | 2.49 | 76.28 | |
| 28 | REMOVE, INSTALL LOADER'S PERISCOPE. | 100.00 | 2.49 | 2.49 | 78.77 | |
| 32 | CHECK AND MAINTAIN OPERATION OF THE EXTERNAL INTERPHONE | 100.00 | 2.49 | 2.49 | 81.26 | |
| 33 | INSTALL, REMOVE AND OPERATE ALL RADIO COMPONENTS. | 100.00 | 2.49 | 2.49 | 83.75 | 25 |
| 23 | DISPOSE OF EMPTY CARTRIDGE CASES. | 100.00 | 2.31 | 2.31 | 86.06 | |
| 3 | LOAD AMMUNITION ANNOUNCED BY THE TANK COMMANDER. | 100.00 | 2.02 | 2.02 | 88.08 | |
| 4 | INSURE SAFETY SWITCHES ARE ON OR OFF AS REQUIRED. | 100.00 | 2.02 | 2.02 | 90.10 | |

LOADER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 5 | ANNOUNCE UP WHEN THE WEAPON IS LOADED AND READY TO BE FIRED. | 100.00 | 2.02 | 2.02 | 92.12 | |
| 6 | INSURE PATH OF MAIN GUN RECOIL IS CLEAR. | 100.00 | 2.02 | 2.02 | 94.15 | 30 |
| 7 | CONTINUE TO LOAD UNTIL THE TANK COMMANDER ANNOUNCES CEASE FI | 100.00 | 2.02 | 2.02 | 96.17 | |
| 8 | SET AMMUNITION FUZES, IF REQUIRED. | 100.00 | 2.02 | 2.02 | 98.19 | |
| 25 | CHECK ODDMENT TRAYS, BRACKETS, GUN TOOL ROLL AND TURRET BUST | 100.00 | 1.81 | 1.81 | 100.00 | 33 |

M60A2

DRIVER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 3 | CHECK TRANSMISSION OIL. | 100.00 | 7.10 | 7.10 | 7.10 | |
| 4 | CHECK MAIN ENGINE OIL. | 100.00 | 7.10 | 7.10 | 14.19 | |
| 13 | TOW A DISABLED TANK. | 100.00 | 6.70 | 6.70 | 20.90 | |
| 5 | CHECK ACCIDENT IDENTIFICATION AND OPERATOR'S REPORT OF MOTOR | 100.00 | 6.14 | 6.14 | 27.04 | |
| 14 | FREE A BELLIED OR MIRED TANK. | 100.00 | 5.57 | 5.57 | 32.79 | 5 |
| 10 | DRIVE AT NIGHT. | 100.00 | 5.58 | 5.58 | 38.38 | |
| 8 | INSTALL AND OPERATE TANK HELMET COMMUNICATIONS | 100.00 | 5.19 | 5.19 | 43.57 | |
| 1 | DRIVE AND MANEUVER UNDER ALL WEATHER CONDITIONS AND OVER ALL | 100.00 | 4.63 | 4.63 | 48.20 | |
| 6 | REMOVE, INSPECT AND INSTALL DRIVER'S PERISCOPES. | 100.00 | 4.63 | 4.63 | 52.83 | |
| 7 | CLEAN, INSTALL AND REMOVE INFRARED PERISCOPE. | 100.00 | 4.63 | 4.63 | 57.46 | 10 |
| 9 | FORD WATER OBSTACLE OF FORDING DEPTH. | 100.00 | 4.63 | 4.63 | 62.09 | |
| 11 | DRIVE WITH DRIVER'S HATCH CLOSED. | 100.00 | 4.63 | 4.63 | 66.73 | |
| 12 | DRIVE TANK IN TACTICAL FORMATIONS. | 100.00 | 4.63 | 4.63 | 71.36 | |
| 16 | STOP THE TANK ON TANK COMMANDER'S ORDER, BRINGING THE VEHICLE | 100.00 | 4.63 | 4.63 | 75.99 | |
| 20 | ALERT THE REST OF THE TANK CREW TO ANY IMPENDING ROUGHNESS | 100.00 | 4.63 | 4.63 | 80.62 | 15 |
| 19 | ALERT THE REST OF THE TANK CREW TO ANY IMPENDING, ABRUPT CHA | 100.00 | 4.29 | 4.29 | 84.91 | |
| 15 | SEARCH FOR GOOD FIRING POSITIONS THAT AFFORD PROTECTION FOR | 100.00 | 4.24 | 4.24 | 89.15 | |
| 17 | DRIVE THE VEHICLE FORWARD SMOOTHLY WHEN MACHINEGUNS ARE USED | 100.00 | 4.24 | 4.24 | 93.39 | |
| 2 | FILL FUEL TANKS. | 100.00 | 3.46 | 3.46 | 96.84 | |
| 18 | AID THE TANK COMMANDER IN ACQUIRING TARGETS. | 100.00 | 3.16 | 3.16 | 100.00 | 20 |

M 1 COMMANDER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY ... AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 3 | LOAD AND CHARGE THE CUPOLA MACHINEGUN (50 CAL). | 100.00 | 2.69 | 2.69 | 2.69 | |
| 4 | PREPARE TO FIRE THE CUPOLA MACHINEGUN. | 100.00 | 2.69 | 2.69 | 5.39 | |
| 5 | FIRE THE CUPOLA MACHINEGUN. | 100.00 | 2.69 | 2.69 | 8.08 | |
| 6 | UNLOAD THE CUPOLA MACHINEGUN. | 100.00 | 2.69 | 2.69 | 10.78 | |
| 9 | ANNOUNCE AN INITIAL FIRE COMMAND. | 100.00 | 2.69 | 2.69 | 13.47 | 5 |
| 10 | TURN ON THE XEON SEARCHLIGHT. | 100.00 | 2.69 | 2.69 | 16.16 | |
| 12 | ANALYZE A TARGET RAPIDLY AND SELECT BEST AVAILABLE AMMUNITION. | 100.00 | 2.69 | 2.69 | 18.86 | |
| 13 | DESIGNATE SPECIFIC TARGET WHEN MORE THAN ONE IS OBSERVED. | 100.00 | 2.69 | 2.69 | 21.55 | |
| 15 | RELEASE CONTROL OF TURRET TO GUNNER UPON HEARING IDENTIFIED. | 100.00 | 2.69 | 2.69 | 24.25 | |
| 17 | PLACE THE RANGE FINDER IN OPERATION. | 100.00 | 2.69 | 2.69 | 26.94 | 10 |
| 18 | RANGE ON A TARGET, UTILIZING THE RANGE FINDER. | 100.00 | 2.69 | 2.69 | 29.63 | |
| 20 | ANNOUNCE RANGE WHEN RANGE FINDER CANNOT MECHANICALLY TRANSMI | 100.00 | 2.69 | 2.69 | 32.33 | |
| 22 | IDENTIFY TARGET PROVIDED BY THE PLATOON LEADER | 100.00 | 2.69 | 2.69 | 35.02 | |
| 23 | INSPECT FOR SAFETY OF CREW BEFORE TRAVERSING TURRET. | 100.00 | 2.69 | 2.69 | 37.72 | |
| 26 | INDEX APPROPRIATE RANGE, IF REQUIRED. | 100.00 | 2.69 | 2.69 | 40.41 | 15 |
| 31 | PERFORM THE NON-SENSING METHOD OF ADJUSTMENT. | 100.00 | 2.69 | 2.69 | 43.11 | |
| 33 | DISTINGUISH BETWEEN FRIENDLY AND ENEMY PERSONNEL AND MATERIAL | 100.00 | 2.69 | 2.69 | 45.80 | |
| 45 | BORESIGHT AND ZERO THE 50 CAL MACHINEGUN. | 100.00 | 2.69 | 2.69 | 48.49 | |
| 47 | SELECT FIRING POSITIONS. | 100.00 | 2.69 | 2.69 | 51.19 | |
| 48 | OPERATE TANK COMMANDER'S INFRARED CONTROLS AND EQUIPMENT. | 100.00 | 2.69 | 2.69 | 53.88 | 20 |
| 1 | PLACE THE TURRET CUPOLA INTO POWER OPERATION. | 100.00 | 2.54 | 2.54 | 56.43 | |
| 2 | DEACTIVATE THE TURRET CUPOLA FROM POWER OPERATION. | 100.00 | 2.54 | 2.54 | 58.97 | |
| 7 | UNLOAD A RUPTURED CARTRIDGE CASE FROM THE CUPOLA MACHINEGUN. | 100.00 | 2.54 | 2.54 | 61.51 | |
| 8 | RESPOND TO A CUPOLA MACHINEGUN MISFIRE. | 100.00 | 2.54 | 2.54 | 64.06 | |
| 11 | LAY THE MAIN GUN FOR DIRECTION. | 100.00 | 2.54 | 2.54 | 66.60 | 25 |
| 37 | TROUBLESHOOT MALFUNCTIONS OF THE MAIN GUN. | 100.00 | 2.54 | 2.54 | 69.15 | |
| 27 | APPLY MIL RELATION FORMULA. | 100.00 | 2.52 | 2.52 | 71.67 | |
| 42 | PREPARE A RANGE CARD. | 100.00 | 2.17 | 2.17 | 73.84 | |
| 36 | FIRE COAXIAL MACHINEGUN AT A MOVING TARGET. | 100.00 | 2.02 | 2.02 | 75.86 | |
| 41 | OPERATE HEADSET AND CHEST SET. | 100.00 | 2.00 | 2.00 | 77.86 | 30 |
| 35 | FIRE COAXIAL MACHINEGUN. | 100.00 | 1.87 | 1.87 | 79.73 | |
| 14 | PROVIDE GUIDANCE TO THE GUNNER FOR LAYING THE MAIN GUN FOR D | 66.67 | 2.43 | 1.62 | 91.35 | |

M551

COMMANDER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 21 | IDENTIFY TARGET PROVIDED BY ANOTHER CREW MEMBER. | 66.67 | 2.43 | 1.62 | 82.97 | |
| 32 | ESTIMATE SPEED OF MOVING TARGETS. | 66.67 | 2.43 | 1.62 | 84.59 | |
| 38 | ENGAGE TARGETS, UTILIZING ARTIFICIAL ILLUMINATION. | 66.67 | 2.43 | 1.62 | 86.21 | 35 |
| 39 | CHECK AZIMUTH INDICATOR FOR ACCURACY AND SLIPPAGE | 66.67 | 2.43 | 1.62 | 87.83 | |
| 46 | BORESIGHT AND ZERO THE MAIN GUN. | 66.67 | 2.43 | 1.62 | 89.45 | |
| 16 | MEASURE DEFLECTION SHIFT IN MILS, UTILIZING A REFERENCE POINT | 66.67 | 2.20 | 1.47 | 90.92 | |
| 30 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT AGAINST A MOV | 66.67 | 1.91 | 1.27 | 92.19 | |
| 43 | FIRE FROM A RANGE CARD. | 66.67 | 1.65 | 1.10 | 93.29 | 40 |
| 44 | BORESIGHT AND ZERO THE COAXIAL MACHINEGUN. | 66.67 | 1.42 | 0.95 | 94.23 | |
| 24 | TURN ON APPROPRIATE GUN SWITCH. | 66.67 | 1.39 | 0.92 | 95.16 | |
| 25 | INDEX APPROPRIATE AMMUNITION. | 66.67 | 1.39 | 0.92 | 96.08 | |
| 28 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT, UTILIZING PE | 66.67 | 1.39 | 0.92 | 97.01 | |
| 29 | PERFORM 'BURST-ON-TARGET' METHOD OF ADJUSTMENT, UTILIZING TE | 66.67 | 1.39 | 0.92 | 97.93 | 45 |
| 34 | PREPARE TO FIRE COAXIAL MACHINEGUN. | 66.67 | 1.20 | 0.80 | 98.73 | |
| 40 | READ THE COMPUTER. | 66.67 | 0.97 | 0.65 | 99.38 | |
| 19 | PURGE MAIN GUN HYDRAULIC SYSTEM. | 66.67 | 0.94 | 0.62 | 100.00 | 48 |

M551 GUNNER

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY ... AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 7 | IDENTIFY THE TARGET. | 100.00 | 4.57 | 4.57 | 4.57 | |
| 2 | ASSURE TURRET TRAVERSING AREA IS CLEAR OF PERSONNEL AND OBST | 100.00 | 4.50 | 4.50 | 9.07 | |
| 12 | LOCATE DIRECTION OF TARGET BY REFERENCE POINT WHEN REQUIRED | 100.00 | 4.50 | 4.50 | 13.57 | |
| 33 | BORESIGHT AND ZERO THE MAIN GUN. | 100.00 | 4.50 | 4.50 | 18.08 | |
| 36 | EMPLOY INFRARED SIGHTS. | 100.00 | 4.17 | 4.17 | 22.24 | 5 |
| 31 | PREPARE A RANGE CARD. | 100.00 | 4.14 | 4.14 | 26.38 | |
| 32 | FIRE FROM A RANGE CARD. | 100.00 | 4.14 | 4.14 | 30.52 | |
| 13 | INDEX THE RANGE, IF REQUIRED | 100.00 | 3.76 | 3.76 | 34.29 | |
| 26 | DISTINGUISH BETWEEN FRIENDLY AND ENEMY PERSONNEL AND MATERIAL | 100.00 | 3.76 | 3.76 | 38.05 | |
| 34 | BORESIGHT AND ZERO THE COAXIAL MACHINEGUN. | 100.00 | 3.70 | 3.70 | 41.75 | 10 |
| 35 | BORESIGHT THE SEARCHLIGHT. | 100.00 | 3.43 | 3.43 | 45.18 | |
| 37 | ENGAGE TARGETS, USING ARTIFICIAL ILLUMINATION | 100.00 | 3.43 | 3.43 | 48.60 | |
| 23 | APPLY TANK COMMANDER'S CORRECTION FOR SUBSEQUENT ROUNDS AGAI | 100.00 | 3.22 | 3.22 | 51.83 | |
| 15 | IF UTILIZING TELESCOPIC SIGHT, SELECT PROPER RETICLE AS INDI | 100.00 | 3.13 | 3.13 | 54.96 | |
| 18 | APPLY TANK COMMANDER'S CORRECTIONS FOR ADJUSTING FIRE, UTILI | 100.00 | 2.95 | 2.95 | 57.91 | 15 |
| 19 | APPLY TANK COMMANDER'S CORRECTION FOR ADJUSTING FIRE, UTIL | 100.00 | 2.95 | 2.95 | 60.87 | |
| 11 | TRAVERSE RAPIDLY IN THE ANNOUNCED DIRECTION AS INDICATED BY | 66.67 | 4.14 | 2.76 | 63.62 | |
| 28 | ASSIST THE LOADER IF THE MAIN GUN FAILS TO LOAD. | 100.00 | 2.75 | 2.75 | 66.38 | |
| 30 | ASSIST LOADER IN LOCATING THE DIFFICULTY WHEN THE GUN FAILS | 100.00 | 2.75 | 2.75 | 69.13 | |
| 20 | APPLY NON-SENSING METHOD OF ADJUSTMENT, WHEN REQUIRED. | 100.00 | 2.42 | 2.42 | 71.55 | 20 |
| 14 | ANNOUNCE ON-THE-WAY AND FIRE. | 66.67 | 3.53 | 2.35 | 73.90 | |
| 3 | PLACE THE TURRET IN POWER OPERATION. | 66.67 | 3.13 | 2.09 | 75.99 | |
| 1 | COMPLY WITH THE ELEMENTS OF A FIRE COMMAND. | 66.67 | 3.03 | 2.02 | 78.01 | |
| 4 | TURN ON APPROPRIATE GUN SWITCH. | 66.67 | 3.03 | 2.02 | 80.02 | |
| 10 | APPLY THE INITIAL LEAD FOR A MOVING TARGET. | 66.67 | 3.03 | 2.02 | 82.04 | 25 |
| 17 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT, UTILIZING THE | 66.67 | 3.03 | 2.02 | 84.06 | |
| 24 | FIRE COAXIAL MACHINEGUN, USING INFINITY SIGHT IN THE VIEWING | 66.67 | 3.03 | 2.02 | 86.08 | |
| 29 | ASSIST TANK COMMANDER IN LOCATING THE DIFFICULTY WHEN THE GUN | 66.67 | 3.03 | 2.02 | 89.98 | |
| 27 | UPON DETECTION OF ENEMY TARGET, PROVIDE TANK COMMANDER WITH | 66.67 | 2.83 | 1.88 | 89.98 | |
| 5 | INDEX ANNOUNCED AMMUNITION. | 66.67 | 2.62 | 1.75 | 91.73 | 30 |
| 16 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT, UTILIZING THE | 66.67 | 2.62 | 1.75 | 93.48 | |

GUNNER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 21 | ESTIMATE SPEED OF MOVING TARGET. | 66.67 | 1.82 | 1.21 | 94.69 | |
| 22 | APPLY "BURST-ON-TARGET" METHOD OF ADJUSTMENT AGAINST A MOVING | 66.67 | 1.82 | 1.21 | 95.90 | |
| 25 | SEARCH FOR TARGETS THROUGH THE VIEWING WINDOW OF THE PERISCOPE | 66.67 | 1.82 | 1.21 | 97.11 | |
| 8 | POSITION THE PERISCOPE RETICLE TO FACILITATE RANGING. | 66.67 | 1.71 | 1.14 | 98.25 | 35 |
| 9 | UPON RECEIPT OF RANGE ELEMENT OF THE FIRE COMMAND, MAKE A PR | 66.67 | 1.71 | 1.14 | 99.39 | |
| 6 | LOOK THROUGH VISION BLOCK TO LOCATE THE TARGET. | 66.67 | 0.91 | 0.61 | 100.00 | 37 |

M 61 LOADER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY ... AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 4 | INSURE SAFETY SWITHCES ARE ON OR OFF AS REQUIRED. | 100.00 | 5.53 | 5.53 | 5.53 | |
| 15 | TAKE IMMEDIATE ACTION IN CASE OF A RUNAWAY COAXIAL MACHINEGUN | 100.00 | 5.53 | 5.53 | 11.06 | |
| 2 | AID TANK COMMANDER IN ACQUIRING TARGETS. | 100.00 | 5.06 | 5.06 | 16.12 | |
| 1 | IDENTIFY ALL TYPES OF TANK AMMUNITION. | 100.00 | 4.18 | 4.18 | 20.30 | |
| 27 | MAINTAIN, INSTALL AND OPERATE HEADSET AND CHEST SET. | 100.00 | 4.12 | 4.12 | 24.42 | 5 |
| 23 | DISPOSE OF EMPTY CARTRIDGE CASES. | 100.00 | 3.95 | 3.95 | 28.38 | |
| 14 | TAKE IMMEDIATE ACTION IN CASE OF A STOPPAGE OF THE MACHINEGUN | 100.00 | 3.84 | 3.84 | 32.22 | |
| 30 | CHECK OPERATION OF THE INTERPHONE CONTROL BOX AND INTERPHONE | 100.00 | 3.72 | 3.72 | 35.94 | |
| 6 | INSURE PATH OF MAIN GUN RECOIL IS CLEAR. | 100.00 | 3.65 | 3.65 | 39.59 | |
| 12 | BORESIGHT COAXIAL MACHINEGUN. | 100.00 | 3.65 | 3.65 | 43.24 | 10 |
| 21 | UNLOAD A ROUND BY USE OF RAMMING AND EXTRACTING TOOL. | 100.00 | 3.48 | 3.48 | 46.73 | |
| 10 | DISASSEMBLE, MAINTAIN AND ASSEMBLE COAXIAL MACHINEGUN. | 100.00 | 3.31 | 3.31 | 50.04 | |
| 25 | CHECK ODDMENT TRAYS, BRACKETS, GUN TOOL ROLL AND TURRET BUST | 100.00 | 3.19 | 3.19 | 53.23 | |
| 9 | REMOVE COAXIAL MACHINEGUN. | 100.00 | 3.08 | 3.08 | 56.31 | |
| 11 | INSTALL COAXIAL MACHINEGUN. | 100.00 | 3.08 | 3.08 | 59.38 | 15 |
| 5 | ANNOUNCE UP WHEN THE WEAPON IS LOADED AND READY TO BE FIRED. | 100.00 | 2.96 | 2.96 | 62.35 | |
| 17 | STOW MAIN GUN AMMUNITION. | 100.00 | 2.96 | 2.96 | 65.31 | |
| 19 | UNLOAD A MAIN GUN ROUND FOR WHICH NO ATTEMPT HAS BEEN MADE TO | 100.00 | 2.96 | 2.96 | 68.28 | |
| 20 | UNLOAD A ROUND OR CARTRIDGE CASE THAT DOES NOT AUTOMATICALLY | 100.00 | 2.96 | 2.96 | 71.24 | |
| 26 | UNLOCK, MAINTAIN AND LOCK GUN TRAVEL LOCK. | 100.00 | 2.96 | 2.96 | 74.21 | 20 |
| 22 | UNLOAD A STUCK PROJECTILE WHEN SEPARATED FROM THE CARTRIDGE | 100.00 | 2.73 | 2.73 | 76.94 | |
| 18 | STOW COAXIAL MACHINEGUN AMMUNITION. | 100.00 | 2.49 | 2.49 | 79.44 | |
| 29 | READ REPLENISHER TAPE. | 100.00 | 2.49 | 2.49 | 81.93 | |
| 13 | LOAD COAXIAL MACHINEGUN. | 100.00 | 2.27 | 2.27 | 84.20 | |
| 31 | ENTER PRESCRIBED RADIO NET. | 100.00 | 2.20 | 2.20 | 86.40 | 25 |
| 24 | CHECK TURRET BLOWER. | 100.00 | 2.04 | 2.04 | 88.43 | |
| 28 | REMOVE, INSTALL LOADER'S PERISCOPE. | 100.00 | 2.04 | 2.04 | 90.47 | |
| 33 | INSTALL, REMOVE AND OPERATE ALL RADIO COMPONENTS. | 100.00 | 1.97 | 1.97 | 92.44 | |
| 32 | CHECK AND MAINTAIN OPERATION OF THE EXTERNAL INTERPHONE. | 100.00 | 1.57 | 1.57 | 94.01 | |
| 3 | LOAD AMMUNITION ANNOUNCED BY THE TANK COMMANDER. | 66.67 | 2.33 | 1.56 | 95.56 | 30 |
| 7 | CONTINUE TO LOAD UNTIL THE TANK COMMANDER ANNOUNCES CEASE FI | 66.67 | 2.33 | 1.56 | 97.12 | |

LOADER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 8 | SET AMMUNITION FUZES, IF REQUIRED. | 66.67 | 2.33 | 1.56 | 98.67 | |
| 16 | UNLOAD THE COAXIAL MACHINEGUN. | 66.67 | 1.99 | 1.33 | 100.00 | 33 |

M/1

DRIVER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY ... AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 1 | DRIVE AND MANEUVER UNDER ALL WEATHER CONDITIONS AND OVER ALL | 100.00 | 5.48 | 5.48 | 5.48 | |
| 3 | CHECK TRANSMISSION OIL. | 100.00 | 5.48 | 5.48 | 10.96 | |
| 4 | CHECK MAIN ENGINE OIL. | 100.00 | 5.48 | 5.48 | 16.44 | |
| 7 | CLEAN, INSTALL AND REMOVE INFRARED PERISCOPE | 100.00 | 5.48 | 5.48 | 21.92 | |
| 10 | DRIVE AT NIGHT. | 100.00 | 5.48 | 5.48 | 27.40 | 5 |
| 11 | DRIVE WITH DRIVER'S HATCH CLOSED. | 100.00 | 5.48 | 5.48 | 32.89 | |
| 12 | DRIVE TANK IN TACTICAL FORMATIONS. | 100.00 | 5.48 | 5.48 | 38.37 | |
| 16 | STOP THE TANK ON TANK COMMANDER'S ORDER, BRINGING THE VEHICL | 100.00 | 5.48 | 5.48 | 43.85 | |
| 19 | ALERT THE REST OF THE TANK CREW TO ANY IMPENDING, ABRUPT CHA | 100.00 | 5.48 | 5.48 | 49.33 | |
| 20 | ALERT THE REST OF THE TANK CREW TO ANY IMPENDING ROUGHNESS | 100.00 | 5.48 | 5.48 | 54.81 | 10 |
| 6 | REMOVE, INSPECT AND INSTALL DRIVER'S PERISCOPES. | 100.00 | 5.13 | 5.13 | 59.94 | |
| 9 | FORD WATER OBSTACLE OF FORDING DEPTH. | 100.00 | 5.10 | 5.10 | 65.03 | |
| 15 | SEARCH FOR GOOD FIRING POSITIONS THAT AFFORD PROTECTION FOR | 100.00 | 5.10 | 5.10 | 70.13 | |
| 17 | DRIVE THE VEHICLE FORWARD SMOOTHLY WHEN MACHINEGUNS ARE USED | 100.00 | 5.10 | 5.10 | 75.23 | |
| 14 | FREE A BELLIED OR MIRED TANK. | 100.00 | 4.38 | 4.38 | 79.61 | 15 |
| 5 | CHECK ACCIDENT IDENTIFICATION AND OPERATOR'S REPORT OF MOTOR | 100.00 | 4.36 | 4.36 | 83.97 | |
| 18 | AID THE TANK COMMANDER IN ACQUIRING TARGETS. | 100.00 | 4.33 | 4.33 | 88.30 | |
| 2 | FILL FUEL TANKS. | 100.00 | 4.06 | 4.06 | 92.36 | |
| 13 | TOW A DISABLED TANK. | 100.00 | 4.00 | 4.00 | 96.36 | |
| 8 | INSTALL AND OPERATE TANK HELMET COMMUNICATIONS. | 100.00 | 3.64 | 3.64 | 100.00 | 20 |

105mm

CHIEF OF SECTION

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS. . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS. . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING. . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASKS | TASKS TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 2 | SUPERVISE OPERATION DURING ENTIRE SEQUENCE | 100.00 | 3.26 | 3.26 | 3.26 | |
| 6 | CHECK RECOIL SYSTEM | 100.00 | 3.26 | 3.26 | 6.51 | |
| 7 | DIRECT SERVICING OF PIECE | 100.00 | 3.26 | 3.26 | 9.77 | |
| 8 | FOLLOW FIRE COMMANDS | 100.00 | 3.26 | 3.26 | 13.02 | |
| 10 | INDICATE ALTERNATE AIMING POINT TO GUNNER | 100.00 | 3.26 | 3.26 | 16.28 | 5 |
| 11 | SELECT CLEARLY DEFINES POINT AT 1500 METERS OR MORE | 100.00 | 3.26 | 3.26 | 19.54 | |
| 12 | READ AND RECORD DEFLECTIONS FROM AZIMUTH COUNTER (ALTERNATE | 100.00 | 3.26 | 3.26 | 22.79 | |
| 13 | VERIFY THAT PIECE IS READY FOR ACTION | 100.00 | 3.26 | 3.26 | 26.05 | |
| 16 | INSURE EFFICIENT AND SAFE OPERATION | 100.00 | 3.26 | 3.26 | 29.30 | |
| 17 | FOLLOW AND REPEAT FIRE COMMANDS | 100.00 | 3.26 | 3.26 | 32.56 | 10 |
| 19 | GIVE COMMAND TO FIRE | 100.00 | 3.26 | 3.26 | 35.81 | |
| 22 | LAY FOR QUADRANT WITH GUNNER'S QUADRANT | 100.00 | 3.26 | 3.26 | 39.07 | |
| 25 | GIVE COMMAND "CHECK FIRING" | 100.00 | 3.26 | 3.26 | 42.33 | |
| 26 | IDENTIFY OR SELECT TARGET | 100.00 | 3.26 | 3.26 | 45.58 | |
| 28 | ESTIMATE RANGE TO TARGET | 100.00 | 3.26 | 3.26 | 48.84 | 15 |
| 29 | DETERMINE LEAD IN MILS | 100.00 | 3.26 | 3.26 | 52.04 | |
| 31 | GIVE SUBSEQUENT COMMANDS FOR CHANGE IN LEAD AND RANGE | 100.00 | 3.26 | 3.26 | 55.35 | |
| 32 | COMMANDS "END OF MISSION" | 100.00 | 3.26 | 3.26 | 58.61 | |
| 9 | MEASURE SITE TO CREST | 100.00 | 3.12 | 3.12 | 61.73 | |
| 18 | INDICATE WHEN PIECE IS READY TO FIRE | 100.00 | 3.12 | 3.12 | 64.85 | 20 |
| 14 | REPORT ANY DEFECTS THAT WILL CAUSE DELAY TO XO | 100.00 | 2.99 | 2.99 | 67.84 | |
| 20 | CHECK FUNCTIONING OF MATERIAL DURING FIRING | 100.00 | 2.99 | 2.99 | 70.84 | |
| 23 | MEASURE QUADRANT ON INITIAL ROUND | 100.00 | 2.99 | 2.99 | 73.83 | |
| 15 | COMMAND FIRE OF PIECE ON COMMAND OF XO | 100.00 | 2.86 | 2.86 | 76.69 | |
| 30 | GIVE INITIAL COMMANDS IN SEQUENCE | 100.00 | 2.86 | 2.86 | 79.55 | 25 |
| 1 | GIVE COMMAND "PREPARE FOR ACTION" | 100.00 | 2.84 | 2.84 | 82.39 | |
| 21 | REPORT ERRORS AND UNUSUAL INCIDENTS TO XO | 100.00 | 2.76 | 2.76 | 85.14 | |

CHIEF OF SECTION

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 24 | CONDUCT PREARRANGED FIRES | 100.00 | 2.73 | 2.73 | 87.87 | |
| 27 | IDENTIFY TARGET DESIGNATED BY XO | 100.00 | 2.73 | 2.73 | 90.60 | |
| 5 | CHECK POSITION OF REPLENISHER TAPE INDICATOR AND RECUPERATOR | 83.33 | 3.24 | 2.70 | 93.30 | 30 |
| 33 | GIVE FIRE COMMANDS WITH RANGE GIVEN IN FORM OF QUADRANT | 100.00 | 2.62 | 2.62 | 95.92 | |
| 3 | DIRECT BACKING OF CARRIAGE AGAINST SPADES | 66.67 | 3.06 | 2.04 | 97.96 | |
| 4 | DIRECT DRIVER TO CUT ENGINE AND SET BRAKES | 66.67 | 3.06 | 2.04 | 100.00 | 33 |

GUNNER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 10 | UNCOVER AZIMUTH 6400-MIL COUNTER AND ZERO GUNNER'S AID COUNT | 100.00 | 3.94 | 3.94 | 3.94 | |
| 6 | ASSIST DRIVER IN DISENGAGING TRAVELING LOCK | 100.00 | 3.34 | 3.34 | 7.28 | |
| 5 | CHECK CAB HYDRAULIC SYSTEM POWER PACK PRESSURE | 80.00 | 3.40 | 2.72 | 10.00 | |
| 27 | PLACE ANNOUNCED QUADRANT ON THE ELEVATION COUNTER | 80.00 | 3.40 | 2.72 | 12.72 | |
| 12 | LEVEL TELESCOPE MOUNT | 100.00 | 2.67 | 2.67 | 15.39 | 5 |
| 13 | TEST AND ALIGN (BORESIGHT) FIRE CONTROL EQUIPMENT | 100.00 | 2.67 | 2.67 | 18.06 | |
| 14 | LAY HOWITZER FOR DIRECTION | 100.00 | 2.67 | 2.67 | 20.74 | |
| 15 | IDENTIFY AIMING POINT THROUGH TELESCOPE | 100.00 | 2.67 | 2.67 | 23.41 | |
| 16 | SET ANNOUNCED DEFLECTION ON AZIMUTH COUNTER | 100.00 | 2.67 | 2.67 | 26.08 | |
| 17 | TRAVERSE CAB UNTIL RETICLE PATTERN OF TELESCOPE IS CENTERED | 100.00 | 2.67 | 2.67 | 28.75 | 10 |
| 18 | CHECKS THAT PITCH - AND CROSS-LEVEL BUBBLES ARE CENTERED | 100.00 | 2.67 | 2.67 | 31.43 | |
| 19 | DIRECT ALIGNMENT OF AIMING POSTS AND/OR COLLIMATOR | 100.00 | 2.67 | 2.67 | 34.10 | |
| 21 | SET AND LAY FOR DEFLECTION | 100.00 | 2.67 | 2.67 | 36.77 | |
| 24 | CENTER PITCH -AND CROSS-LEVEL BUBBLES | 100.00 | 2.67 | 2.67 | 39.44 | |
| 30 | PREPARE PANORAMIC TELESCOPE FOR DIRECT LAYING | 100.00 | 2.67 | 2.67 | 42.12 | 15 |
| 32 | SET INITIAL LEAD ON AZIMUTH COUNTER | 100.00 | 2.67 | 2.67 | 44.79 | |
| 34 | MAINTAIN SIGHT PICTURE BY CONTINUOUS TRACKING OF TARGET | 100.00 | 2.67 | 2.67 | 47.46 | |
| 35 | GIVE COMMAND "FIRE" | 100.00 | 2.67 | 2.67 | 50.13 | |
| 36 | TURN AZIMUTH KNOB IN 5-MIL INCREMENTS TO SET LEAD CHANGES AS | 100.00 | 2.67 | 2.67 | 52.81 | |
| 37 | LAY FOR DEFLECTION | 100.00 | 2.67 | 2.67 | 55.48 | 20 |
| 38 | ANNOUNCE RANGE AND SET ELEVATION QUADRANT | 100.00 | 2.67 | 2.67 | 58.15 | |
| 40 | CENTER CROSS-LEVEL BUBBLE ON THE PANORAMIC TELESCOPE MOUNT | 100.00 | 2.67 | 2.67 | 60.82 | |
| 9 | INSTALL PANORAMIC TELESCOPE | 100.00 | 2.56 | 2.56 | 63.38 | |
| 23 | TRAVERSE PIECE UNTIL VERTICAL RETICLE OF TELESCOPE IS ON LEF | 100.00 | 2.56 | 2.56 | 65.94 | |
| 33 | TRAVERSE HOWITZER UNTIL VERTICAL RETICLE IS CENTERED ON TARGET | 100.00 | 2.56 | 2.56 | 68.50 | 25 |
| 4 | CHECK EQUILIBRATOR FLUID LEVEL | 100.00 | 2.52 | 2.52 | 71.02 | |
| 7 | CHECK FUNCTIONING OF TRAVERSING MECHANISM | 100.00 | 2.52 | 2.52 | 73.54 | |

GUNNER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 26 | PLACE GUNNER'S ELEVATING CONTROL SWITCH TO GUNNER | 80.00 | 3.11 | 2.49 | 76.03 | |
| 25 | CORRECT FOR DISPLACEMENT WHEN VERTICAL RETICLE IS DISPLACED | 100.00 | 2.45 | 2.45 | 78.48 | |
| 20 | LAY ON ALTERNATE AIMING POINT | 100.00 | 2.41 | 2.41 | 80.88 | 30 |
| 22 | SET ANNOUNCED DEFLECTION ON RESET COUNTER | 80.00 | 2.82 | 2.25 | 83.14 | |
| 29 | REFER PIECE | 100.00 | 2.14 | 2.14 | 85.28 | |
| 2 | PLACE CAB POWER SWITCH TO ON | 80.00 | 2.54 | 2.03 | 87.31 | |
| 11 | SET AZIMUTH COUNTER TO 3200 MILS | 80.00 | 2.39 | 1.91 | 89.22 | |
| 31 | ACTUATE CLICK SIGHT MECHANISM | 80.00 | 2.39 | 1.91 | 91.13 | 35 |
| 39 | ELEVATE HOWITZER UNTIL BUBBLE IN PITCH-LEVEL VIAL IS CENTERED | 80.00 | 2.39 | 1.91 | 93.04 | |
| 3 | SELECT NO. 1 GUNNER FOR POWER ELEVATION | 80.00 | 2.25 | 1.80 | 94.83 | |
| 8 | COMMAND DRIVER TO LIFT AND LOCK BALLISTIC COVER | 80.00 | 2.25 | 1.80 | 96.63 | |
| 28 | ELEVATE TUBE UNTIL ELEVATION-LEVEL BUBBLE IS CENTERED | 80.00 | 2.25 | 1.80 | 98.43 | |
| 1 | RELEASE CAB TRAVERSE LOCK | 80.00 | 1.97 | 1.57 | 100.00 | 40 |

## ASSISTANT GUNNER

COUNT OF TASKS LISTED. . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING. . . . . .

| TASKS | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 16 | INSURE BUBBLES ARE CENTERED | 100.00 | 8.65 | 8.65 | 8.65 | |
| 2 | CHECK FUNCTIONING OF ELEVATING MECHANISMS | 100.00 | 8.37 | 8.37 | 17.03 | |
| 27 | ELEVATE OR DEPRESS PIECE UNTIL APPROPRIATE RANGE LINE IS ON | 100.00 | 8.09 | 8.09 | 25.12 | |
| 4 | INSURE CROSS-LEVEL BUBBLE IS CENTERED | 100.00 | 7.66 | 7.66 | 32.77 | |
| 24 | ELEVATE OR DEPRESS PIECE UNTIL TARGET IS ON APPROPRIATE RANG | 100.00 | 7.40 | 7.40 | 40.18 | 5 |
| 3 | DEPRESS OR ELEVATE TUBE TO LOADING ELEVATION | 100.00 | 6.99 | 6.99 | 47.17 | |
| 14 | ELEVATE PIECE TO ANNOUNCED QUADRANT AFTER LOADING | 80.00 | 6.94 | 5.55 | 52.71 | |
| 12 | SET ANNOUNCED QUADRANT ON ELEVATION COUNTER WITH ELEVATION K | 80.00 | 6.33 | 5.06 | 57.78 | |
| 15 | INSURE APPROPRIATE SETTINGS ON ELEVATING QUADRANT | 80.00 | 6.21 | 4.97 | 62.74 | |
| 21 | PREPARE DIRECT FIRE TELESCOPE | 80.00 | 5.85 | 4.68 | 67.43 | 10 |
| 26 | MAINTAIN TARGET ON APPROPRIATE RANGE LINE BY CONTINUOUS TRAC | 80.00 | 5.27 | 4.22 | 71.64 | |
| 1 | ELEVATE TUBE CLEAR OF HOWITZER TRAVELING LOCK | 60.00 | 5.74 | 3.45 | 75.09 | |
| 5 | SET CORRECTION COUNTER TO ZERO | 80.00 | 4.07 | 3.26 | 78.34 | |
| 17 | CALLS "SET" WHEN PIECE HAS BEEN LAID FOR RANGE | 60.00 | 4.80 | 2.88 | 81.23 | |
| 6 | ASSIT CHIEF OF SECTION IN MEASURING SITE TO CREST | 60.00 | 4.49 | 2.70 | 83.92 | 15 |
| 8 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 60.00 | 4.33 | 2.60 | 86.52 | |
| 7 | CHECK DIRECT FIRE TELESCOPE | 60.00 | 4.19 | 2.51 | 89.04 | |
| 13 | PLACE TUBE AT LOADING POSITION, DEPENDING ON TYPE OF RAMMER | 60.00 | 3.57 | 2.14 | 91.18 | |
| 18 | PLACE TUBE AT LOADING POSITION AFTER EACH ROUND IS FIRED, DE | 40.00 | 4.43 | 1.77 | 92.95 | |
| 22 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 40.00 | 3.02 | 1.21 | 94.15 | 20 |
| 23 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 40.00 | 2.56 | 1.02 | 95.18 | |
| 10 | CENTER CANT CORRECTION BUBBLE | 20.00 | 4.63 | 0.93 | 96.10 | |
| 11 | VERIFY THAT ELEVATION AND AZIMUTH SLIP SCALES ARE SET AT 4 | 20.00 | 4.63 | 0.93 | 97.03 | |
| 9 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 40.00 | 1.87 | 0.75 | 97.78 | |
| 19 | CLEAN OBTURATOR VENT AND PRIMER SEAT | 20.00 | 3.70 | 0.74 | 98.52 | 25 |
| 20 | SWAB OUT BORE, WASH POWDER RESIDUE FROM OBTURATOR HEAD, THE | 20.00 | 3.70 | 0.74 | 99.26 | |
| 25 | CHECK LEVEL VIAL MIRROR AND ADJUST FOR CANT TO CENTER BUBBLE | 20.00 | 3.70 | 0.74 | 100.00 | 27 |

105mm

2ND CANNONEER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 5 | UNLOAD AND ARRANGE EQUIPMENT AS DIRECTED BY THE CHIEF OF SEC | 71.43 | 22.55 | 16.11 | 16.11 | |
| 52 | HOLD PROJECTILE WHILE NO. 2 FUZES AND SETS FUZE | 71.43 | 4.80 | 3.43 | 19.54 | |
| 9 | ASSIST NO. 2 IN UNLOADING FUZE BOXES AND OPENING AND ARRANGI | 85.71 | 3.96 | 3.40 | 22.93 | |
| 49 | STAND PROJECTILE ON END AND CLEAN THOROUGHLY | 85.71 | 3.83 | 3.28 | 26.22 | |
| 14 | ASSEMBLE AIMING POSTS OR COLLIMATOR | 85.71 | 3.68 | 3.15 | 29.37 | 5 |
| 42 | ATTACHED DESIGNATED FUZE | 85.71 | 3.36 | 2.88 | 32.25 | |
| 16 | UNLOAD FUZE BOXES AND OPEN AND ARRANGE FUZES | 85.71 | 3.31 | 2.84 | 35.09 | |
| 10 | UNLOAD AND ARRANGE PROJECTILES | 71.43 | 3.82 | 2.73 | 37.82 | |
| 38 | SELECT CHARGE DESIGNATED BY XO | 71.43 | 3.79 | 2.71 | 40.52 | |
| 53 | SET SUPERQUICK AND DELAY FUZES WITH FUZE WRENCH | 57.14 | 4.62 | 2.64 | 43.16 | 10 |
| 26 | ASSEMBLE RAMMER STAFF AND HEAD | 71.43 | 3.63 | 2.59 | 45.76 | |
| 54 | READ AND ANNOUNCE TIME SET ON FUZE | 57.14 | 4.47 | 2.56 | 48.31 | |
| 48 | SELECT PROPER PROJECTILE | 71.43 | 3.43 | 2.45 | 50.77 | |
| 34 | ASSIST NO. 3 AND 4 IN PREPARING AMMUNITION | 71.43 | 3.42 | 2.44 | 53.21 | |
| 43 | EXAMINE ENTIRE PROJECTILE FOR DEFECTS | 71.43 | 3.24 | 2.31 | 55.52 | 15 |
| 35 | INSPECT FUZE WELL FOR RUST AND DIRT | 71.43 | 3.18 | 2.27 | 57.80 | |
| 47 | REMOVE SAFETY PULL WIRE FROM TIME FUZES | 57.14 | 3.88 | 2.22 | 60.01 | |
| 51 | REMOVE IGNITER PROTECTOR CAP FROM BASE CHARGE | 42.86 | 5.13 | 2.20 | 62.21 | |
| 32 | CARRY PROJECTILE TO HOWITZER | 57.14 | 3.77 | 2.15 | 64.36 | |
| 25 | UNLOAD AIMING POSTS, RAMMER STAFF SECTIONS AND PIONEER EQUIP | 57.14 | 3.70 | 2.11 | 66.48 | 20 |
| 31 | INSPECT AND CLEAN PROJECTILES | 57.14 | 3.61 | 2.06 | 68.54 | |
| 50 | SET TIME FUZES USING APPROPRIATE FUZE SETTER | 71.43 | 2.79 | 1.99 | 70.53 | |
| 21 | SET OUT AIMING POSTS | 57.14 | 3.45 | 1.97 | 72.51 | |
| 36 | HAND THE PROPELLANT CHARGE TO NO. 1 | 57.14 | 3.41 | 1.95 | 74.46 | |
| 46 | PREPARE AND VERIFY CORRECT CHARGE | 57.14 | 3.40 | 1.94 | 76.40 | 25 |
| 13 | PROCURE FUZE SETTER | 57.14 | 3.25 | 1.86 | 78.26 | |
| 18 | EMPLACE AND HOLD TESTING TARGET | 71.43 | 2.58 | 1.84 | 80.10 | |

2ND CANNONEER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 12 | LAY COMMUNICATION CABLE FROM HOWITZER TO M1-155/GT | 42.86 | 4.15 | 1.77 | 81.87 | |
| 40 | PLACE PROJECTILE NEAR NO. 1 | 57.14 | 3.01 | 1.72 | 83.59 | |
| 30 | ASSIST NO. 5 IN PREPARING THE PROPELLANT CHARGE | 42.86 | 3.50 | 1.50 | 85.09 | 30 |
| 6 | ASSIST NO. 4 AND 5 IN UNLOADING AND ARRANGING AMMUNITION | 57.14 | 2.57 | 1.47 | 86.56 | |
| 33 | PREPARE PROPELLANT CHARGE | 42.86 | 3.39 | 1.45 | 88.01 | |
| 11 | UNLOAD AND ARRANGE PROPELLING CHARGES | 42.86 | 3.30 | 1.42 | 89.43 | |
| 37 | VERIFY THAT PROJECTILE IS TYPE DESIGNATED IN COMMAND | 57.14 | 2.33 | 1.33 | 90.76 | |
| 15 | PREPARE TELEPHONE FOR USE AND CHECK OPERATION | 57.14 | 2.13 | 1.22 | 91.97 | 35 |
| 23 | LOWER AND SECURE HOWITZER TRAVELING LOCK | 57.14 | 2.13 | 1.22 | 93.19 | |
| 7 | DROP THE RIGHT SPADE | 42.86 | 2.55 | 1.09 | 94.28 | |
| 22 | PLACE VENT CLEANING EQUIPMENT IN A CONVENIENT LOCATION | 42.86 | 2.55 | 1.09 | 95.38 | |
| 19 | ASSIST NO. 1 IN INSPECTING AND CLEANING THE BREECH BLOCK, CH | 42.86 | 2.11 | 0.90 | 96.28 | |
| 8 | SET BRAKE AND STOP ENGINE | 28.57 | 2.74 | 0.78 | 97.07 | 40 |
| 45 | TIE REMAINING BAGS TOGETHER | 28.57 | 2.74 | 0.78 | 97.85 | |
| 17 | REMOVE MUZZLE PLUG | 42.86 | 1.71 | 0.73 | 98.58 | |
| 41 | REMOVE COMPLETE CHARGE FROM CONTAINER, PLACING BASE CHARGE O | 28.57 | 2.44 | 0.70 | 99.28 | |
| 44 | REMOVE PROPELLANTS NOT REQUIRED | 28.57 | 2.44 | 0.70 | 99.98 | |
| 39 | REMOVE GROMMET AND EXAMINE ROTATING BAND FOR DIRT OR BURRS | 28.57 | 2.14 | 0.61 | 100.59 | 45 |
| 20 | OPEN AND LOCK DIRECT FIRE TELESCOPE WINDOW | 28.57 | 1.85 | 0.53 | 101.12 | |
| 24 | RAISE AND SECURE BALLISTIC COVER | 28.57 | 1.85 | 0.53 | 101.64 | |
| 3 | REMOVE PAULIN FROM CAB STORAGE RACK AND SPREAD ON GROUND | 100.00 | 0.43 | 0.43 | 102.07 | |
| 2 | BACK CARRIAGE AGAINST SPADES | 100.00 | 0.34 | 0.34 | 102.41 | |
| 27 | PLACE INSTRUMENT PANEL INSIDE DRIVER'S COMPARTMENT AND CLOSE | 14.29 | 2.38 | 0.34 | 102.75 | 50 |
| 28 | SECURE DRIVER'S HATCH | 14.29 | 2.39 | 0.34 | 103.09 | |
| 29 | REMOVE LIFTING PLUG | 14.29 | 1.19 | 0.17 | 103.26 | |
| 1 | OPEN REAR HULL DOORS | 100.00 | 0.09 | 0.09 | 103.34 | |
| 4 | ASSIST NO. 3 IN PREPARING PAULIN | 100.00 | 0.09 | 0.09 | 103.43 | 54 |

TOWED

CHIEF OF ... TION

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASKS | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 2 | SUPERVISE OPERATION DURING ENTIRE SEQUENCE | 100.00 | 3.42 | 3.42 | 3.42 | |
| 6 | CHECK RECOIL SYSTEM | 100.00 | 3.42 | 3.42 | 6.84 | |
| 9 | MEASURE SITE TO CREST | 100.00 | 3.42 | 3.42 | 10.26 | |
| 10 | INDICATE ALTERNATE AIMING POINT TO GUNNER | 100.00 | 3.42 | 3.42 | 13.68 | |
| 13 | VERIFY THAT PIECE IS READY FOR ACTION | 100.00 | 3.42 | 3.42 | 17.10 | 5 |
| 15 | COMMAND FIRE OF PIECE ON COMMAND OF XO | 100.00 | 3.42 | 3.42 | 20.52 | |
| 16 | INSURE EFFICIENT AND SAFE OPERATION | 100.00 | 3.42 | 3.42 | 23.94 | |
| 17 | FOLLOW AND REPEAT FIRE COMMANDS | 100.00 | 3.42 | 3.42 | 27.35 | |
| 18 | INDICATE WHEN PIECE IS READY TO FIRE | 100.00 | 3.42 | 3.42 | 30 77 | |
| 19 | GIVE COMMAND TO FIRE | 100.00 | 3.42 | 3.42 | 34.19 | 10 |
| 21 | REPORT ERRORS AND UNUSUAL INCIDENTS TO XO | 100.00 | 3.42 | 3.42 | 37.61 | |
| 25 | GIVE COMMAND "CHECK FIRING" | 100.00 | 3.42 | 3.42 | 41.03 | |
| 28 | ESTIMATE RANGE TO TARGET | 100.00 | 3.42 | 3.42 | 44.45 | |
| 30 | GIVE INITIAL COMMANDS IN SEQUENCE | 100.00 | 3.42 | 3.42 | 47.87 | |
| 31 | GIVEN SUBSEQUENT COMMANDS FOR CHANGE IN LEAD AND RANGE | 100.00 | 3.42 | 3.42 | 51.29 | 15 |
| 14 | REPORT ANY DEFECTS THAT WILL CAUSE DELAY TO XO | 100.00 | 3.25 | 3.25 | 54.54 | |
| 33 | GIVE FIRE COMMANDS WITH RANGE GIVEN IN FORM OF QUADRANT | 100.00 | 3.25 | 3.25 | 57.80 | |
| 20 | CHECK FUNCTIONING OF MATERIAL DURING FIRING | 100.00 | 3.24 | 3.24 | 61.04 | |
| 27 | IDENTIFY TARGET DESIGNATED BY XO | 100.00 | 3.24 | 3.24 | 64.27 | |
| 8 | FOLLOW FIRE COMMANDS | 100.00 | 3.09 | 3.09 | 67.36 | 20 |
| 7 | DIRECT SERVICING OF PIECE | 100.00 | 3.07 | 3.07 | 70.43 | |
| 11 | SELECT CLEARLY DEFINED POINT AT 1500 METERS OR MORE | 100.00 | 3.07 | 3.07 | 73.51 | |
| 23 | MEASURE QUADRANT ON INITIAL ROUND | 100.00 | 3.06 | 3.06 | 76.56 | |
| 24 | CONDUCT PREARRANGED FIRES | 100.00 | 3.06 | 3.06 | 79.62 | |
| 1 | GIVE COMMAND "PREPARE FOR ACTION" | 100.00 | 2.88 | 2.88 | 82.50 | 25 |
| 22 | LAY FOR QUADRANT WITH GUNNER'S QUADRANT | 100.00 | 2.88 | 2.88 | 85.38 | |
| 29 | DETERMINE LEAD IN MILS | 100.00 | 2.60 | 2.60 | 87.98 | |
| 26 | IDENTIFY OR SELECT TARGET | 100.00 | 2.57 | 2.57 | 90.55 | |

CHIEF OF SECTION

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 5 | CHECK POSITION OF REPLENSIHER TAPE INDICATOR AND RECUPERATOR | 75.00 | 3.15 | 2.36 | 92.91 | |
| 32 | COMMANDS "END OF MISSION" | 75.00 | 3.02 | 2.26 | 95.18 | 30 |
| 12 | READ AND RECORD DEFLECTIONS FROM AZIMUTH COUNTER (ALTERNATE | 75.00 | 2.94 | 2.21 | 97.38 | |
| 3 | DIRECT BACKING OF CARRIAGE AGAINST SPADES | 50.00 | 2.62 | 1.31 | 98.69 | |
| 4 | DIRECT DRIVER TO CUT ENGINE AND SET BRAKES | 50.00 | 2.61 | 1.31 | 100.00 | 33 |

TOWED

GUNNER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASKS | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 9 | INSTALL PANORAMIC TELESCOPE | 100.00 | 3.70 | 3.70 | 3.70 | |
| 12 | LEVEL TELESCOPE MOUNT | 100.00 | 3.70 | 3.70 | 7.40 | |
| 14 | LAY HOWITZER FOR DIRECTION | 100.00 | 3.70 | 3.70 | 11.10 | |
| 15 | IDENTIFY AIMING POINT THROUGH TELESCOPE | 100.00 | 3.70 | 3.70 | 14.80 | |
| 19 | DIRECT ALIGNMENT OF AIMING POSTS AND/OR COLLIMATOR | 100.00 | 3.70 | 3.70 | 18.50 | 5 |
| 34 | MAINTAIN SIGHT PICTURE BY CONTINUOUS TRACKING OF TARGET | 100.00 | 3.70 | 3.70 | 22.19 | |
| 18 | CHECKS THAT PITCH - AND CROSS-LEVEL BUBBLES ARE CENTERED | 100.00 | 3.60 | 3.60 | 25.79 | |
| 21 | SET AND LAY FOR DEFLECTION | 100.00 | 3.60 | 3.60 | 29.39 | |
| 23 | TRAVERSE PIECE UNTIL VERTICAL RETICLE OF TELESCOPE IS ON LEFT | 100.00 | 3.60 | 3.60 | 32.99 | |
| 24 | CENTER PITCH - AND CROSS-LEVEL BUBBLES ARE CENTERED | 100.00 | 3.60 | 3.60 | 36.59 | 10 |
| 13 | TEST AND ALIGN (BORESIGHT) FIRE CONTROL EQUIPMENT | 100.00 | 3.37 | 3.37 | 39.96 | |
| 20 | LAY ON ALTERNATE AIMING POINT | 100.00 | 3.36 | 3.36 | 43.32 | |
| 33 | TRAVERSE HOWITZER UNTIL VERTICAL RETICLE IS CENTERED ON TARG | 87.50 | 3.63 | 3.18 | 46.50 | |
| 16 | SET ANNOUNCED DEFLECTION ON AZIMUTH COUNTER | 87.50 | 3.55 | 3.10 | 49.60 | |
| 29 | REFER PIECE | 87.50 | 3.54 | 3.10 | 52.70 | 15 |
| 35 | GIVE COMMAND "FIRE" | 87.50 | 3.54 | 3.10 | 55.79 | |
| 25 | CORRECT FOR DISPLACEMENT WHEN VERTICAL RETICLE IS DISPLACED | 87.50 | 3.52 | 3.08 | 58.87 | |
| 30 | PREPARE PANORAMIC TELESCOPE FOR DIRECT LAYING | 87.50 | 3.44 | 3.01 | 61.89 | |
| 37 | LAY FOR DEFLECTION | 87.50 | 3.44 | 3.01 | 64.90 | |
| 39 | ELEVATE HOWITZER UNTIL BUBBLE IN PITCH-LEVEL VIAL IS CENTERED | 87.50 | 3.44 | 3.01 | 67.92 | 20 |
| 28 | ELEVATE TUBE UNTIL ELEVATION-LEVEL BUBBLE IS CENTERED | 87.50 | 3.42 | 3.00 | 70.91 | |
| 4 | CHECK EQUILIBRATOR FLUID LEVEL | 100.00 | 2.81 | 2.81 | 73.73 | |
| 27 | PLACE ANNOUNCED QUADRANT ON THE ELEVATION COUNTER | 75.00 | 3.60 | 2.70 | 76.43 | |
| 7 | CHECK FUNCTIONING OF TRAVERSING MECHANISM | 75.00 | 3.49 | 2.62 | 79.04 | |
| 40 | CENTER CROSS-LEVEL BUBBLE ON THE PANORAMIC TELESCOPE MOUNT | 75.00 | 3.40 | 2.55 | 81.60 | 25 |
| 26 | TURN AZIMUTH KNOB IN 5-MIL INCREMENTS TO SET LEAD CHANGES AS | 75.00 | 3.38 | 2.53 | 84.13 | |

GUNNER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 11 | SET AZIMUTH COUNTER TO 3200 MILS | 62.50 | 3.58 | 2.23 | 86.34 | |
| 22 | SET ANNOUNCED DEFLECTION ON RESET COUNTER | 62.50 | 3.55 | 2.22 | 88.58 | |
| 38 | ANNOUNCE RANGE AND SET ELEVATION QUADRANT | 62.50 | 3.41 | 2.13 | 90.71 | |
| 10 | UNCOVER AZIMUTH 6400-MIL COUNTER AND ZERO GUNNER'S AID COUNT | 50.00 | 3.51 | 1.75 | 92.47 | 30 |
| 32 | SET INITIAL LEAD ON AZIMUTH COUNTER | 50.00 | 3.24 | 1.62 | 94.08 | |
| 26 | PLACE GUNNER'S ELEVATING CONTROL SWITCH TO GUNNER | 37.50 | 3.12 | 1.17 | 95.26 | |
| 17 | TRAVERSE CAB UNTIL RETICLE PATTERN OF TELESCOPE IS CENTERED | 37.50 | 3.07 | 1.15 | 96.41 | |
| 6 | ASSIST DRIVER IN DISENGAGING TRAVELING LOCK | 50.00 | 1.70 | 0.85 | 97.26 | |
| 31 | ACTUATE CLICK SIGHT MECHANISM | 25.00 | 2.95 | 0.74 | 97.99 | 35 |
| 5 | CHECK CAB HYDRAULIC SYSTEM POWER PACK PRESSURE | 25.00 | 2.28 | 0.57 | 98.56 | |
| 3 | SELECT NO. 1 GUNNER FOR POWER ELEVATION | 25.00 | 1.73 | 0.43 | 99.00 | |
| 1 | RELEASE CAB TRAVERSE LOCK | 12.50 | 2.67 | 0.33 | 99.33 | |
| 2 | PLACE CAB POWER SWITCH TO ON | 12.50 | 2.67 | 0.33 | 99.67 | |
| 8 | COMMAND DRIVER TO LIFT AND LOCK BALLISTIC COVER | 12.50 | 2.67 | 0.33 | 100.00 | 40 |

ASSISTANT GUNNER

COUNT OF TASKS LISTED. . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASKS | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 19 | CLEAN OBTURATOR VENT AND PRIMER SEAT | 85.71 | 16.35 | 14.01 | 14.01 | |
| 17 | CALLS "SET" WHEN PIECE HAS BEEN LAID FOR RANGE | 85.61 | 12.09 | 10.36 | 24.38 | |
| 20 | SWAB OUT BORE, WASH POWDER RESIDUE FROM OBTURATOR HEAD, THE | 71.43 | 9.26 | 6.61 | 30.99 | |
| 21 | PREPARE DIRECT FIRE TELESCOPE | 85.71 | 7.41 | 6.35 | 37.34 | |
| 6 | ASSIST CHIEF OF SECTION IN MEASURING SITE TO CREST | 85.71 | 6.88 | 5.91 | 43.24 | 5 |
| 1 | ELEVATE TUBE CLEAR OF HOWITZER TRAVELING LOCK | 71.43 | 3.54 | 3.24 | 46.48 | |
| 12 | SET ANNOUNCED QUADRANT ON ELEVATION COUNTER WITH ELEVATION K | 71.43 | 4.54 | 3.24 | 49.72 | |
| 7 | CHECK DIRECT FIRE TELESCOPE | 71.43 | 4.40 | 3.14 | 52.86 | |
| 13 | PLACE TUBE AT LOADING POSITION, DEPENDING ON TYPE OF RAMMER | 71.43 | 4.18 | 2.98 | 55.85 | |
| 14 | ELEVATE PIECE TO ANNOUNCED QUADRANT AFTER LOADING | 71.43 | 4.18 | 2.98 | 58.83 | 10 |
| 15 | INSURE APPROPRIATE SETTINGS ON ELEVATING QUADRANT | 71.43 | 4.18 | 2.98 | 61.81 | |
| 18 | PLACE TUBE AT LOADING POSITION AFTER EACH ROUND IS FIRED, DE | 71.43 | 3.84 | 2.74 | 64.55 | |
| 4 | INSURE CROSS-LEVEL BUBBLE IS CENTERED | 71.43 | 3.81 | 2.72 | 67.27 | |
| 10 | CENTER CANT CORRECTION BUBBLE | 71.43 | 3.81 | 2.72 | 70.00 | |
| 16 | INSURE BUBBLES ARE CENTERED | 71.43 | 3.81 | 2.72 | 72.72 | 15 |
| 24 | ELEVATE OR DEPRESS PIECE UNTIL TARGET IS ON APPROPRIATE RANGE | 71.43 | 3.81 | 2.72 | 75.44 | |
| 27 | ELEVATE OR DEPRESS PIECE UNTIL APPROPRIATE RANGE LINE IS ON | 71.43 | 3.81 | 2.72 | 78.16 | |
| 2 | CHECK FUNCTIONING OF ELEVATING MECHANISMS | 71.43 | 3.73 | 2.67 | 80.83 | |
| 22 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 71.43 | 3.64 | 2.60 | 83.43 | |
| 26 | MAINTAIN TARGET ON APPROPRIATE RANGE LINE BY CONTINUOUS TRAC | 71.43 | 3.64 | 2.60 | 86.03 | 20 |
| 8 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 71.43 | 3.33 | 2.38 | 88.41 | |
| 9 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 71.43 | 3.23 | 2.31 | 90.72 | |
| 3 | DEPRESS OR ELEVATE TUBE TO LOADING ELEVATION | 71.43 | 3.01 | 2.15 | 92.86 | |
| 25 | CHECK LEVEL VIAL MIRROR AND ADJUST FOR CANT TO CENTER BUBBLE | 71.43 | 2.64 | 1.89 | 94.75 | |
| 23 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 71.43 | 2.47 | 1.77 | 96.52 | 25 |
| 5 | SET CORRECTION COUNTER TO ZERO | 71.43 | 2.47 | 1.77 | 98.28 | |
| 11 | VERIFY THAT ELEVATION AND AZIMUTH SLIP SCALES ARE SET AT 4 | 71.43 | 2.40 | 1.72 | 100.00 | 27 |

155 Towed

NO. 1 CANNONEER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 12 | PLACE PROPELLANT CHARGE IN CHAMBER | 88.89 | 17.63 | 15.67 | 15.67 | |
| 6 | PROCURE PRIMERS AND PLACE IN CONVENIENT LOCATION | 77.78 | 12.56 | 9.77 | 25.44 | |
| 17 | SWAB AND INSPECT THE POWDER CHAMBER | 77.78 | 10.08 | 7.84 | 33.28 | |
| 10 | MOVE RAMMER CYLINDER TO RAM POSITION | 77.78 | 8.71 | 6.78 | 40.05 | |
| 4 | INSPECT, OPERATE, AND CLEAN BREECH BLOCK, RAMMER, CHAMBER, | 77.78 | 8.67 | 6.74 | 46.80 | 5 |
| 5 | PROCURE SPONGE, BURLAP, AND BUCKET OF WATER AND PLACE IN CON | 77.78 | 8.50 | 6.61 | 53.40 | |
| 13 | COMMAND "CLOSE" AND CLOSE THE BREECH | 66.67 | 9.90 | 6.60 | 60.00 | |
| 9 | PLACE PROJECTILE IN LOADING TRAY OF POWER RAMMER | 77.78 | 7.48 | 5.82 | 65.82 | |
| 3 | OPERATE FIRING MECHANISM | 66.67 | 6.90 | 4.60 | 70.42 | |
| 11 | RETURN RAMMER TO STOWED POSITION | 77.78 | 5.51 | 4.29 | 74.70 | 10 |
| 7 | LOWER RAMMER TO OPERATING POSITION | 66.67 | 5.69 | 3.79 | 78.49 | |
| 14 | INSERT PRIMER IN PRIMER CHAMBER, CLOSE BLOCK ASSEMBLY, AND P | 55.56 | 6.61 | 3.67 | 82.17 | |
| 15 | ATTACH FIRING LANYARD TO FIRING MECHANISM LEVER | 55.56 | 5.83 | 3.24 | 85.41 | |
| 16 | FIRE HOWITZER ON COMMAND | 55.56 | 5.66 | 3.14 | 88.55 | |
| 2 | REMOVE LEFT SPADE STRUT SAFETY PIN, RELEASE LOCKING LATCH, A | 66.67 | 4.71 | 3.14 | 91.69 | 15 |
| 8 | RELEASE RAMMER CYLINDER LATCH | 55.56 | 5.29 | 2.94 | 94.63 | |
| 1 | OPEN REAR TURRET DOORS | 44.44 | 6.20 | 2.76 | 97.38 | |
| 18 | CALL OUT NUMBER AND QUADRANT FOR EACH ROUND IN VOLLEY FIRE | 55.56 | 4.71 | 2.62 | 100.00 | 18 |

155 TOWED

CANNONEERS NOS. 2-6 AND DRIVER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 34 | ASSIST NO. 3 AND 4 IN PREPARING AMMUNITION | 100.00 | 3.39 | 3.39 | 3.39 | |
| 6 | ASSIST NO. 4 AND 5 IN UNLOADING AND ARRANGING AMMUNITION | 100.00 | 3.11 | 3.11 | 6.50 | |
| 5 | UNLOAD AND ARRANGE EQUIPMENT AS DIRECTED BY THE CHIEF OF SEC | 93.33 | 3.14 | 2.93 | 9.43 | |
| 10 | UNLOAD AND ARRANGE PROJECTILES | 93.33 | 2.99 | 2.79 | 12.22 | |
| 32 | CARRY PROJECTILE TO HOWITZER | 86.67 | 3.05 | 2.64 | 14.87 | 5 |
| 11 | UNLOAD AND ARRANGE PROPELLING CHARGES | 93.33 | 2.68 | 2.50 | 17.37 | |
| 25 | UNLOAD AIMING POSTS, RAMMER STAFF SECTIONS AND PIONEER EQUIP | 93.33 | 2.65 | 2.47 | 19.84 | |
| 23 | LOWER AND SECURE HOWITZER TRAVELING LOCK | 93.33 | 2.61 | 2.44 | 22.28 | |
| 43 | EXAMINE ENTIRE PROJECTILE FOR DEFECTS | 86.67 | 2.71 | 2.35 | 24.62 | |
| 31 | INSPECT AND CLEAN PROJECTILES | 93.33 | 2.49 | 2.32 | 26.94 | 10 |
| 26 | ASSEMBLE RAMMER STAFF AND HEAD | 93.33 | 2.40 | 2.24 | 29.19 | |
| 51 | REMOVE IGNITER PROTECTOR CAP FROM BASE CHARGE | 66.67 | 3.24 | 2.16 | 31.35 | |
| 9 | ASSIST NO. 2 IN UNLOADING FUZE BOXES AND OPENING AND ARRANGI | 86.67 | 2.45 | 2.12 | 33.47 | |
| 33 | PREPARE PROPELLANT CHARGE | 80.00 | 2.63 | 2.10 | 35.57 | |
| 54 | READ AND ANNOUNCE TIME SET ON FUZE | 80.00 | 2.62 | 2.10 | 37.67 | 15 |
| 8 | SET BRAKE AND STOP ENGINE | 66.67 | 3.14 | 2.10 | 39.76 | |
| 28 | SECURE DRIVER'S HATCH | 66.67 | 3.14 | 2.10 | 41.86 | |
| 42 | ATTACH DESIGNATED FUZE | 80.00 | 2.55 | 2.04 | 43.90 | |
| 27 | PLACE INSTRUMENT PANEL INSIDE DRIVER'S COMPARTMENT AND CLOSE | 60.00 | 3.38 | 2.03 | 45.93 | |
| 30 | ASSIST NO. 5 IN PREPARING THE PROPELLANT CHARGE | 86.67 | 2.31 | 2.00 | 47.93 | 20 |
| 35 | INSPECT FUZE WELL FOR RUST AND DIRT | 86.67 | 2.31 | 2.00 | 49.93 | |
| 52 | HOLD PROJECTILE WHILE NO. 2 FUZES AND SETS FUZE | 80.00 | 2.49 | 1.99 | 51.93 | |
| 50 | SET TIME FUZES USING APPROPRIATE FUZE SETTER | 80.00 | 2.44 | 1.95 | 53.88 | |
| 18 | EMPLACE AND HOLD TESTING TARGET | 86.67 | 2.25 | 1.95 | 55.83 | |
| 38 | SELECT CHARGE DESIGNATED BY XO | 80.00 | 2.40 | 1.92 | 57.75 | 25 |
| 17 | REMOVE MUZZLE PLUG | 86.67 | 2.20 | 1.91 | 59.66 | |
| 21 | SET OUT AIMING POSTS | 86.67 | 2.16 | 1.87 | 61.53 | |
| 4 | ASSIST NO. 3 IN PREPARING PAULIN | 100.00 | 1.83 | 1.83 | 63.36 | |

CANNONEERS NOS. 2-6 AND DRIVER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 2 | BACK CARRIAGE AGAINST SPADES | 100.00 | 1.81 | 1.81 | 65.17 | |
| 53 | SET SUPERQUICK AND DELAY FUZES WITH FUZE WRENCH | 73.33 | 2.46 | 1.81 | 66.97 | 30 |
| 41 | REMOVE COMPLETE CHARGE FROM CONTAINER, PLACING BASE CHARGE O | 80.00 | 2.25 | 1.80 | 68.77 | |
| 40 | PLACE PROJECTILE NEAR NO. 1 | 80.00 | 2.25 | 1.80 | 70.57 | |
| 39 | REMOVE GROMMET AND EXAMINE ROTATING BAND FOR DIRT OR BURRS | 86.67 | 2.07 | 1.79 | 72.36 | |
| 3 | REMOVE PAULIN FROM CAB STORAGE RACK AND SPREAD ON GROUND | 100.00 | 1.76 | 1.76 | 74.13 | |
| 44 | REMOVE PROPELLANTS NOT REQUIRED | 73.33 | 2.38 | 1.75 | 75.87 | 35 |
| 46 | PREPARE AND VERIFY CORRECT CHARGE | 73.33 | 2.37 | 1.74 | 77.61 | |
| 16 | UNLOAD FUZE BOXES AND OPEN AND ARRANGE FUZES | 93.33 | 1.79 | 1.68 | 79.29 | |
| 22 | PLACE VENT CLEANING EQUIPMENT INA CONVENIENT LOCATION | 60.00 | 2.72 | 1.63 | 80.92 | |
| 13 | PROCURE FUZE SETTER | 86.67 | 1.85 | 1.61 | 82.52 | |
| 7 | DROP THE RIGHT SPADE | 80.00 | 1.99 | 1.59 | 84.11 | 40 |
| 49 | STAND PROJECTILE ON END AND CLEAN THOROUGHLY | 80.00 | 1.96 | 1.57 | 85.68 | |
| 48 | SELECT PROPER PROJECTILE | 73.33 | 2.09 | 1.53 | 87.21 | |
| 15 | PREPARE TELEPHONE FOR USE AND CHECK OPERATION | 73.33 | 2.07 | 1.52 | 88.73 | |
| 14 | ASSEMBLE AIMING POSTS OR COLLIMATOR | 80.00 | 1.83 | 1.47 | 90.19 | |
| 37 | VERIFY THAT PROJECTILE IS TYPE DESIGNATED IN COMMAND | 80.00 | 1.82 | 1.45 | 91.65 | 45 |
| 19 | ASSIST NO. 1 IN INSPECTING AND CLEANING THE BREECH BLOCK, CH | 80.00 | 1.80 | 1.44 | 93.09 | |
| 12 | LAY COMMUNICATION CABLE FROM HOWITZER TO XM-155/GT | 66.67 | 2.00 | 1.33 | 94.42 | |
| 36 | HAND THE PROPELLANT CHARGE TO NO. 1 | 73.33 | 1.81 | 1.32 | 95.75 | |
| 45 | TIE REMAINING BAGS TOGETHER | 60.00 | 2.18 | 1.31 | 97.06 | |
| 24 | RAISE AND SECURE BALLISTIC COVER | 60.00 | 1.62 | 0.97 | 98.03 | 50 |
| 47 | REMOVE SAFETY PULL WIRE FROM TIME FUZES | 53.33 | 1.71 | 0.91 | 98.94 | |
| 1 | OPEN REAR HULL DOORS | 100.00 | 0.88 | 0.88 | 99.82 | |
| 20 | OPEN AND LOCK DIRECT FIRE TELESCOPE WINDOW | 66.67 | 1.18 | 0.79 | 100.60 | |
| 29 | REMOVE LIFTING PLUG | 53.33 | 1.03 | 0.55 | 101.15 | 54 |

8-In Howitzer

CHIEF OF SECTION

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 5 | CHECK POSITION OF REPLENISHER TAPE INDICATOR AND RECUPERATOR | 100.00 | 3.47 | 3.47 | 3.47 | |
| 6 | CHECK RECOIL SYSTEM | 100.00 | 3.47 | 3.47 | 6.93 | |
| 16 | INSURE EFFICIENT AND SAFE OPERATION | 100.00 | 3.47 | 3.47 | 10.40 | |
| 25 | GIVE COMMAND "CHECK FIRING" | 100.00 | 3.47 | 3.47 | 13.87 | |
| 26 | IDENTIFY OR SELECT TARGET | 100.00 | 3.47 | 3.47 | 17.34 | 5 |
| 30 | GIVE INITIAL COMMANDS IN SEQUENCE | 100.00 | 3.47 | 3.47 | 20.81 | |
| 31 | GIVE SUBSEQUENT COMMANDS FOR CHANGE IN LEAD AND RANGE | 100.00 | 3.47 | 3.47 | 24.28 | |
| 32 | COMMANDS "END OF MISSION" | 100.00 | 3.47 | 3.47 | 27.75 | |
| 2 | SUPERVISE OPERATION DURING ENTIRE SEQUENCE | 100.00 | 3.25 | 3.25 | 30.99 | |
| 13 | VERIFY THAT PIECE IS READY FOR ACTION | 100.00 | 3.25 | 3.25 | 34.24 | 10 |
| 14 | REPORT ANY DEFECTS THAT WILL CAUSE DELAY TO XO | 100.00 | 3.25 | 3.25 | 37.49 | |
| 27 | IDENTIFY TARGET DESIGNATED BY XO | 100.00 | 3.25 | 3.25 | 40.74 | |
| 28 | ESTIMATE RANGE TO TARGET | 100.00 | 3.25 | 3.25 | 43.99 | |
| 29 | DETERMINE LEAD IN MILS | 100.00 | 3.25 | 3.25 | 47.24 | |
| 9 | MEASURE SITE TO CREST | 100.00 | 3.24 | 3.24 | 50.48 | 15 |
| 8 | FOLLOW FIRE COMMANDS | 100.00 | 3.22 | 3.22 | 53.70 | |
| 15 | COMMAND FIRE OF PIECE ON COMMAND OF XO | 100.00 | 3.22 | 3.22 | 56.92 | |
| 18 | INDICATE WHEN PIECE IS READY TO FIRE | 100.00 | 3.22 | 3.22 | 60.14 | |
| 7 | DIRECT SERVICING OF PIECE | 100.00 | 3.03 | 3.03 | 63.16 | |
| 20 | CHECK FUNCTIONING OF MATERIAL DURING FIRING | 100.00 | 3.03 | 3.03 | 66.19 | 20 |
| 23 | MEASURE QUADRANT ON INITIAL ROUND | 100.00 | 3.00 | 3.00 | 69.18 | |
| 1 | GIVE COMMAND "PREPARE FOR ACTION" | 100.00 | 2.99 | 2.99 | 72.18 | |
| 19 | GIVE COMMAND TO FIRE | 100.00 | 2.99 | 2.99 | 75.17 | |
| 17 | FOLLOW AND REPEAT FIRE COMMANDS | 100.00 | 2.97 | 2.97 | 78.14 | |
| 21 | REPORT ERRORS AND UNUSUAL INCIDENTS TO XO | 100.00 | 2.80 | 2.80 | 80.94 | 25 |
| 22 | LAY FOR QUADRANT WITH GUNNER'S QUADRANT | 100.00 | 2.77 | 2.77 | 83.72 | |
| 3 | DIRECT BACKING OF CARRIAGE AGAINST SPADES | 100.00 | 2.74 | 2.74 | 86.46 | |
| 10 | INDICATE ALTERNATE AIMING POINT TO GUNNER | 100.00 | 2.52 | 2.52 | 88.98 | |

CHIEF OF SECTION

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 11 | SELECT CLEARLY DEFINED POINT AT 1500 METERS OR MORE | 100.00 | 2.52 | 2.52 | 91.50 | |
| 4 | DIRECT DRIVER TO CUT ENGINE AND SET BRAKES | 100.00 | 2.27 | 2.27 | 93.77 | 30 |
| 12 | READ AND RECORD DEFLECTIONS FROM AZIMUTH COUNTER (ALTERNATE | 100.00 | 2.24 | 2.24 | 96.01 | |
| 33 | GIVE FIRE COMMANDS WITH RANGE GIVEN IN FORM OF QUADRANT | 66.67 | 2.99 | 1.99 | 98.01 | |
| 24 | CONDUCT PREARRANGED FIRES | 66.67 | 2.99 | 1.99 | 100.00 | 33 |

8-In Howitzer

GUNNER

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 16 | SET ANNOUNCED DEFLECTION ON AZIMUTH COUNTER | 100.00 | 3.26 | 3.26 | 3.26 | |
| 10 | UNCOVER AZIMUTH 6400-MIL COUNTER AND ZERO GUNNER'S AID COUNT | 100.00 | 3.22 | 3.22 | 6.48 | |
| 24 | CENTER PITCH - AND - CROSS LEVEL BUBBLES | 100.00 | 3.22 | 3.22 | 9.71 | |
| 25 | CORRECT FOR DISPLACEMENT WHEN VERTICAL RETICLE IS DISPLACED | 100.00 | 3.22 | 3.22 | 12.93 | |
| 33 | TRAVERSE HOWITZER UNTIL VERTICAL RETICLE IS CENTERED ON TARG | 100.00 | 3.22 | 3.22 | 16.15 | 5 |
| 37 | LAY FOR DEFLECTION | 100.00 | 3.22 | 3.22 | 19.38 | |
| 39 | ELEVATE HOWITZER UNTIL BUBBLE IN PITCH-LEVEL VIAL IS CENTERED | 100.00 | 3.22 | 3.22 | 22.60 | |
| 40 | CENTER CROSS-LEVEL BUBBLE ON THE PANORAMIC TELESCOPE MOUNT | 100.00 | 3.22 | 3.22 | 25.82 | |
| 9 | INSTALL PANORAMIC TELESCOPE | 100.00 | 3.02 | 3.02 | 28.84 | |
| 34 | MAINTAIN SIGHT PICTURE BY CONTINUOUS TRACKING OF TARGET | 100.00 | 3.02 | 3.02 | 31.87 | 10 |
| 38 | ANNOUNCE RANGE AND SET ELEVATION QUADRANT | 100.00 | 3.02 | 3.02 | 34.89 | |
| 11 | SET AZIMUTH COUNTER TO 3200 MILS | 100.00 | 2.99 | 2.99 | 37.88 | |
| 18 | CHECKS THAT PITCH - AND - CROSS LEVEL BUBBLES ARE CENTERED | 100.00 | 2.95 | 2.95 | 40.84 | |
| 28 | ELEVATE TUBE UNTIL ELEVATION-LEVEL BUBBLE IS CENTERED | 100.00 | 2.95 | 2.95 | 43.79 | |
| 12 | LEVEL TELESCOPE MOUNT | 100.00 | 2.72 | 2.72 | 46.51 | 15 |
| 15 | IDENTIFY AIMING POINT THROUGH TELESCOPE | 100.00 | 2.72 | 2.72 | 49.24 | |
| 21 | SET AND LAY FOR DEFLECTION | 100.00 | 2.72 | 2.72 | 51.96 | |
| 22 | SET ANNOUNCED DEFLECTION ON RESET COUNTER | 100.00 | 2.72 | 2.72 | 54.69 | |
| 23 | TRAVERSE PIECE UNTIL VERTICAL RETICLE OF TELESCOPE IS ON LEF | 100.00 | 2.72 | 2.72 | 57.41 | |
| 29 | REFER PIECE | 100.00 | 2.72 | 2.72 | 60.13 | 20 |
| 13 | TEST AND ALIGN (BORESIGHT) FIRE CONTROL EQUIPMENT | 100.00 | 2.69 | 2.69 | 62.82 | |
| 14 | LAY HOWITZER FOR DIRECTION | 100.00 | 2.69 | 2.69 | 65.50 | |
| 19 | DIRECT ALIGNMENT OF AIMING POSTS AND/OR COLLIMATOR | 100.00 | 2.69 | 2.69 | 68.19 | |
| 20 | LAY ON ALTERNATE AIMING POINT | 100.00 | 2.52 | 2.52 | 70.71 | |
| 31 | ACTUATE CLICK SIGHT MECHANISM | 100.00 | 2.52 | 2.52 | 73.24 | 25 |

GUNNER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 32 | SET INITIAL LEAD ON AZIMUTH COUNTER | 100.00 | 2.46 | 2.46 | 75.69 | |
| 5 | CHECK CAB HYDRAULIC SYSTEM POWER PACK PRESSURE | 66.67 | 3.51 | 2.32 | 78.04 | |
| 17 | TRAVERSE CAB UNTIL RETICLE PATTERN OF TELESCOPE IS CENTERED | 100.00 | 2.26 | 2.26 | 80.29 | |
| 27 | PLACE ANNOUNCED QUADRANT ON THE ELVATION COUNTER | 100.00 | 2.26 | 2.26 | 82.55 | |
| 30 | PREPARE PANORAMIC TELESCOPE FOR DIRECT LAYING | 100.00 | 2.26 | 2.26 | 84.80 | 30 |
| 36 | TURN AZIMUTH KNOB IN 5-MIL INCREMENTS TO SET LEAD CHANGES AS | 100.00 | 2.22 | 2.22 | 87.02 | |
| 3 | SELECT NO. 1 GUNNER FOR POWER ELEVATION | 66.67 | 3.11 | 2.07 | 89.09 | |
| 7 | CHECK FUNCTIONING OF TRAVERSING MECHANISM | 66.67 | 2.93 | 1.96 | 91.05 | |
| 26 | PLACE GUNNER'S ELEVATING CONTROL SWITCH TO GUNNER | 66.67 | 2.81 | 1.87 | 92.92 | |
| 4 | CHECK EQUILIBRATOR FLUID LEVEL | 66.67 | 2.70 | 1.80 | 94.73 | 35 |
| 8 | COMMAND DRIVER TO LIFT AND LOCK BALLISTIC COVER | 66.67 | 2.11 | 1.41 | 96.13 | |
| 2 | PLACE CAB POWER SWITCH TO ON | 66.67 | 2.00 | 1.34 | 97.47 | |
| 35 | GIVE COMMAND "FIRE" | 66.67 | 1.78 | 1.19 | 98.66 | |
| 1 | RELEASE CAB TRAVERSE LOCK | 33.33 | 2.42 | 0.81 | 99.46 | |
| 6 | ASSIST DRIVER IN DISENGAGING TRAVELING LOCK | 33.33 | 1.61 | 0.54 | 100.00 | 40 |

8-In Howitzer

ASSISTANT GUNNER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 15 | INSURE APPROPRIATE SETTINGS ON ELEVATING QUADRANT | 100.00 | 5.66 | 5.66 | 5.66 | |
| 16 | INSURE BUBBLES ARE CENTERED | 100.00 | 5.66 | 5.66 | 11.32 | |
| 21 | PREPARE DIRECT FIRE TELESCOPE | 100.00 | 5.66 | 5.66 | 16.99 | |
| 27 | ELEVATE OR DEPRESS PIECE UNTIL APPROPRIATE RANGE LINE IS ON | 100.00 | 5.66 | 5.66 | 22.65 | |
| 2 | CHECK FUNCTIONING OF ELEVATING MECHANISMS | 100.00 | 5.26 | 5.26 | 27.91 | 5 |
| 4 | INSURE CROSS-LEVEL BUBBLE IS CENTERED | 100.00 | 5.02 | 5.02 | 32.93 | |
| 3 | DEPRESS OR ELEVATE TUBE TO LOADING ELEVATION | 100.00 | 4.64 | 4.64 | 37.56 | |
| 12 | SET ANNOUNCED QUADRANT ON ELEVATION COUNTER WITH ELEVATION | 100.00 | 4.46 | 4.46 | 42.02 | |
| 17 | CALLS "SET" WHEN PIECE HAS BEEN LAID FOR RANGE | 100.00 | 4.46 | 4.46 | 46.48 | |
| 24 | ELEVATE OR DEPRESS PIECE UNTIL TARGET IS ON APPROPRIATE RANGE | 100.00 | 4.46 | 4.46 | 50.94 | 10 |
| 1 | ELEVATE TUBE CLEAR OF HOWITZER TRAVELING LOCK | 100.00 | 4.32 | 4.32 | 55.25 | |
| 14 | ELEVATE PIECE TO ANNOUNCED QUADRANT AFTER LOADING | 100.00 | 4.06 | 4.06 | 59.31 | |
| 5 | SET CORRECTION COUNTER TO ZERO | 100.00 | 3.72 | 3.72 | 63.03 | |
| 10 | CENTER CANT CORRECTION BUBBLE | 100.00 | 3.51 | 3.51 | 66.54 | |
| 7 | CHECK DIRECT FIRE TELESCOPE | 100.00 | 3.32 | 3.32 | 69.86 | 15 |
| 11 | VERIFY THAT ELEVATION AND AZIMUTH SLIP SCALES ARE SET AT 4 | 100.00 | 3.32 | 3.32 | 73.18 | |
| 8 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 100.00 | 3.00 | 3.00 | 76.18 | |
| 22 | ADJUST LIGHT CONTROL KNOB FOR OPTIMUM RETICLE ILLUMINATION | 100.00 | 3.00 | 3.00 | 79.18 | |
| 13 | PLACE TUBE AT LOADING POSITION, DEPENDING ON TYPE OF RAMMER | 100.00 | 2.92 | 2.92 | 82.10 | |
| 18 | PLACE TUBE AT LOADING POSITION AFTER EACH ROUND IS FIRED, DE | 100.00 | 2.92 | 2.92 | 85.02 | 20 |
| 26 | MAINTAIN TARGET ON APPROPRIATE RANGE LINE BY CONTINUOUS TRAC | 100.00 | 2.92 | 2.92 | 87.94 | |
| 6 | ASSIST CHIEF OF SECTION IN MEASURING SITE TO CREST | 100.00 | 2.52 | 2.52 | 90.45 | |
| 9 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 66.67 | 3.35 | 2.23 | 92.68 | |
| 23 | ADJUST LEVEL VIAL MIRROR FOR CONVENIENT VIEWING | 66.67 | 3.35 | 2.23 | 94.92 | |
| 25 | CHECK LEVEL VIAL MIRROR AND ADJUST FOR CANT TO CENTER BUBBLE | 66.67 | 3.35 | 2.23 | 97.15 | 25 |
| 19 | CLEAN OBTURATOR VENT AND PRIMER SEAT | 66.67 | 2.14 | 1.43 | 98.57 | |
| 20 | SWAB OUT BORE, WASH POWDER RESIDUE FROM OBTURATOR HEAD, THE | 66.67 | 2.14 | 1.43 | 100.00 | 27 |

8-In Howitzer

## NO. 1 CANNONEER

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 9 | PLACE PROJECTILE IN LOADING TRAY OF POWER RAMMER | 75.00 | 21.85 | 16.38 | 16.38 | |
| 10 | MOVE RAMMER CYLINDER TO RAM POSITION | 75.00 | 14.11 | 10.58 | 26.96 | |
| 11 | RETURN RAMMER TO STOWED POSITION | 75.00 | 14.11 | 10.58 | 37.54 | |
| 7 | LOWER RAMMER TO OPERATING POSITION | 75.00 | 12.02 | 9.02 | 46.56 | |
| 4 | INSPECT, OPERATE, AND CLEAN BREECH BLOCK, RAMMER, CHAMBER, | 75.00 | 11.96 | 8.97 | 55.54 | 5 |
| 17 | SWAB AND INSPECT THE POWDER CHAMBER | 50.00 | 12.14 | 6.07 | 61.61 | |
| 5 | PROCURE SPONGE, BURLAP, AND BUCKET OF WATER AND PLACE IN CON | 50.00 | 11.14 | 5.57 | 67.18 | |
| 8 | RELEASE RAMMER CYLINDER LATCH | 25.00 | 20.00 | 5.00 | 72.18 | |
| 2 | REMOVE LEFT SPADE STRUT SAFETY PIN, RELEASE LOCKING LATCH, | 50.00 | 9.36 | 4.68 | 76.86 | |
| 18 | CALL OUT NUMBER AND QUADRANT FOR EACH ROUND IN VOLLEY FIRE | 25.00 | 17.86 | 4.46 | 81.32 | 10 |
| 12 | PLACE PROPELLANT CHARGE IN CHAMBER | 50.00 | 6.79 | 3.39 | 84.71 | |
| 14 | INSERT PRIMER IN PRIMER CHAMBER, CLOSE BLOCK ASSEMBLY, AND | 50.00 | 6.79 | 3.39 | 88.11 | |
| 3 | OPERATE FIRING MECHANISM | 25.00 | 10.00 | 2.50 | 90.61 | |
| 6 | PROCURE PRIMERS AND PLACE IN CONVENIENT LOCATION | 25.00 | 10.00 | 2.50 | 93.11 | |
| 15 | ATTACH FIRING LANYARD TO FIRING MECHANISM LEVER | 25.00 | 10.00 | 2.50 | 95.61 | 15 |
| 13 | COMMAND "CLOSE" AND CLOSE THE BREECH | 50.00 | 4.79 | 2.39 | 98.00 | |
| 16 | FIRE HOWITZER ON COMMAND | 25.00 | 8.00 | 2.00 | 100.00 | 17 |

AD-A082 955 HUMAN RESOURCES RESEARCH ORGANIZATION ALEXANDRIA VA F/G 5/9
TASK ANALYSES OF THREE SELECTED WEAPONS SYSTEMS,(U)
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8-In Howitzer

CANNONEERS NOS. 2-6 AND DRIVER

COUNT OF TASKS LISTED . . . . . 25
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 9 | ASSIST NO. 2 IN UNLOADING FUZE BOXES AND OPENING AND ARRANG | 90.00 | 3.97 | 3.57 | 3.57 | |
| 10 | UNLOAD AND ARRANGE PROJECTILES | 80.00 | 4.12 | 3.29 | 6.86 | |
| 6 | ASSIST NO. 4 AND 5 IN UNLOADING AND ARRANGING AMMUNITION | 100.00 | 3.28 | 3.28 | 10.15 | |
| 16 | UNLOAD FUZE BOXES AND OPEN AND ARRANGE FUZES | 80.00 | 3.77 | 3.02 | 13.16 | |
| 17 | REMOVE MUZZLE PLUG | 80.00 | 3.67 | 2.94 | 16.10 | 5 |
| 14 | ASSEMBLE AIMING POSTS OR COLLIMATOR | 90.00 | 3.12 | 2.81 | 18.91 | |
| 52 | HOLD PROJECTILE WHILE NO. 2 FUZES AND SETS FUZE | 90.00 | 3.03 | 2.73 | 21.64 | |
| 19 | ASSIST NO. 1 IN INSPECTING AND CLEANING THE BREECH BLOCK, CH | 90.00 | 2.89 | 2.60 | 24.24 | |
| 48 | SELECT PROPER PROJECTILE | 70.00 | 3.71 | 2.59 | 26.83 | |
| 11 | UNLOAD AND ARRANGE PROPELLING CHARGES | 70.00 | 3.67 | 2.58 | 29.42 | 10 |
| 20 | OPEN AND LOCK DIRECT FIRE TELESCOPE WINDOW | 70.00 | 3.51 | 2.46 | 31.87 | |
| 13 | PROCURE FUZE SETTER | 70.00 | 3.46 | 2.42 | 34.29 | |
| 34 | ASSIST NO. 3 AND 4 IN PREPARING AMMUNITION | 70.00 | 3.44 | 2.41 | 36.70 | |
| 2 | BACK CARRIAGE AGAINST SPADES | 100.00 | 2.28 | 2.28 | 38.98 | |
| 25 | UNLOAD AIMING POSTS, RAMMER STAFF SECTIONS AND PIONEER EQUIP | 70.00 | 3.23 | 2.26 | 41.24 | 15 |
| 26 | ASSEMBLE RAMMER STAFF AND HEAD | 70.00 | 3.17 | 2.22 | 43.46 | |
| 8 | SET BRAKE AND STOP ENGINE | 60.00 | 3.51 | 2.11 | 45.57 | |
| 23 | LOWER AND SECURE HOWITZER TRAVELING LOCK | 60.00 | 3.48 | 2.09 | 47.66 | |
| 18 | EMPLACE AND HOLD TESTING TARGET | 80.00 | 2.58 | 2.07 | 49.73 | |
| 21 | SET OUT AIMING POSTS | 70.00 | 2.90 | 2.03 | 51.76 | 20 |
| 12 | LAY COMMUNICATION CABLE FROM HOWITZER TO XM-155/GT | 70.00 | 2.84 | 1.99 | 53.74 | |
| 32 | CARRY PROJECTILE TO HOWITZER | 60.00 | 3.30 | 1.98 | 55.73 | |
| 27 | PLACE INSTRUMENT PANEL INSIDE DRIVER'S COMPARTMENT AND CLOSE | 60.00 | 3.25 | 1.95 | 57.68 | |
| 30 | ASSIST NO. 5 IN PREPARING THE PROPELLANT CHARGE | 70.00 | 2.77 | 1.94 | 59.62 | |
| 5 | UNLOAD AND ARRANGE EQUIPMENT AS DIRECTED BY THE CHIEF OF SEC | 80.00 | 2.42 | 1.94 | 61.56 | 25 |
| 43 | EXAMINE ENTIRE PROJECTILE FOR DEFECTS | 80.00 | 2.42 | 1.94 | 63.50 | |
| 24 | RAISE AND SECURE BALLISTIC COVER | 60.00 | 3.20 | 1.92 | 65.42 | |

CANNONEERS NOS. 2-6 AND DRIVER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 45 | TIE REMAINING BAGS TOGETHER | 70.00 | 2.66 | 1.86 | 67.28 | |
| 40 | PLACE PROJECTILE NEAR NO. 1 | 80.00 | 2.30 | 1.84 | 69.12 | |
| 39 | REMOVE GROMMET AND EXAMINE ROTATING BAND FOR DIRT OR BURRS | 70.00 | 2.53 | 1.77 | 70.89 | 30 |
| 51 | REMOVE IGNITER PROTECTOR CAP FROM BASE CHARGE | 50.00 | 3.49 | 1.75 | 72.64 | |
| 50 | SET TIME FUZES USING APPROPRIATE FUZE SETTER | 60.00 | 2.90 | 1.74 | 74.38 | |
| 53 | SET SUPERQUICK AND DELAY FUZES WITH FUZE WRENCH | 60.00 | 2.88 | 1.73 | 76.11 | |
| 54 | READ AND ANNOUNCE TIME SET ON FUZE | 50.00 | 3.40 | 1.70 | 77.81 | |
| 36 | HAND THE PROPELLANT CHARGE TO NO. 1 | 60.00 | 2.75 | 1.65 | 79.46 | 35 |
| 7 | DROP THE RIGHT SPADE | 60.00 | 2.59 | 1.50 | 81.00 | |
| 38 | SELECT CHARGE DESIGNATED BY XO | 60.00 | 2.52 | 1.51 | 82.52 | |
| 33 | PREPARE PROPELLANT CHARGE | 50.00 | 2.83 | 1.41 | 83.93 | |
| 31 | INSPECT AND CLEAN PROJECTILES | 60.00 | 2.31 | 1.39 | 85.32 | |
| 35 | INSPECT FUZE WELL FOR RUST AND DIRT | 60.00 | 2.30 | 1.38 | 86.70 | 40 |
| 28 | SECURE DRIVER'S HATCH | 60.00 | 2.29 | 1.37 | 88.07 | |
| 3 | REMOVE PAULIN FROM CAB STORAGE RACK AND SPREAD ON GROUND | 100.00 | 1.36 | 1.36 | 89.44 | |
| 46 | PREPARE AND VERIFY CORRECT CHARGE | 50.00 | 2.72 | 1.36 | 90.80 | |
| 37 | VERIFY THAT PROJECTILE IS TYPE DESIGNATED IN COMMAND | 50.00 | 2.41 | 1.20 | 92.00 | |
| 4 | ASSIST NO. 3 IN PREPARING PAULIN | 100.00 | 1.15 | 1.15 | 93.15 | 45 |
| 49 | STAND PROJECTILE ON END AND CLEAN THOROUGHLY | 50.00 | 2.12 | 1.06 | 94.21 | |
| 15 | PREPARE TELEPHONE FOR USE AND CHECK OPERATION | 60.00 | 1.74 | 1.04 | 95.25 | |
| 42 | ATTACH DESIGNATED FUZE | 50.00 | 2.04 | 1.02 | 96.27 | |
| 44 | REMOVE PROPELLANTS NOT REQUIRED | 50.00 | 1.95 | 0.98 | 97.25 | |
| 29 | REMOVE LIFTING PLUG | 50.00 | 1.91 | 0.95 | 98.20 | 50 |
| 1 | OPEN REAR HULL DOORS | 100.00 | 0.90 | 0.90 | 99.10 | |
| 47 | REMOVE SAFETY PULL WIRE FROM TIME FUZES | 40.00 | 2.01 | 0.81 | 99.90 | |
| 22 | PLACE VENT CLEANING EQUIPMENT IN A CONVENIENT LOCATION | 60.00 | 1.26 | 0.75 | 100.66 | |
| 41 | REMOVE COMPLETE CHARGE FROM CONTAINER, PLACING BASE CHARGE O | 50.00 | 1.48 | 0.74 | 101.40 | 54 |

4.2

## SQUAD LEADER

ORDERED BY --- COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 5 | SPOT CHECK LAY OF MORTAR | 100.00 | 27.95 | 27.95 | 27.95 | |
| 4 | SPOT CHECK SETTINGS PLACED ON SIGHT | 90.00 | 25.17 | 22.65 | 50.60 | |
| 3 | RELAY/RECORD FIRE COMMANDS | 80.00 | 22.45 | 17.96 | 68.56 | |
| 1 | DESIGNATE EXACT LOCATION MORTAR IS TO BE MOUNTED | 80.00 | 21.75 | 17.40 | 85.96 | |
| 2 | INDICATE INITIAL DIRECTION OF FIRE | 80.00 | 17.55 | 14.04 | 100.00 | 5 |

GUNNER

COUNT OF TASKS LISTED
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS
ORDERED BY --- AVERAGE PERCENT OF JOB BY ALL MEMBERS
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING
PERCENT OF MEMBERS PERFORMING

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 14 | SET SIGHT FOR DEFLECTION AND ELEVATION ANNOUNCED IN FIRE COM | 100.00 | 4.77 | 4.77 | 4.77 | |
| 4 | MOUNT SIGHT ON MORTAR | 100.00 | 4.46 | 4.46 | 9.22 | |
| 10 | DIRECT POSITIONING OF AIMING POSTS | 100.00 | 4.02 | 4.02 | 13.25 | |
| 9 | ADJUST SIGHT FOR INITIAL LAY ON AIMING POSTS | 100.00 | 3.90 | 3.90 | 17.14 | |
| 13 | REPEAT FIRE COMMAND ISSUED BY FDC OR FO | 100.00 | 3.67 | 3.67 | 20.81 | 5 |
| 25 | REMOVE SIGHT BEFORE FIRING, UNTIL BASEPLATE IS SETTLED | 100.00 | 3.58 | 3.58 | 24.39 | |
| 3 | PARTICIPATE IN MOUNTING MORTAR | 100.00 | 3.52 | 3.52 | 27.92 | |
| 30 | REMOVE SIGHT FROM MORTAR BEFORE DISMOUNTING OF MORTAR | 100.00 | 3.52 | 3.52 | 31.44 | |
| 11 | LAY MORTAR FOR INITIAL DIRECTION AND ELEVATION | 100.00 | 3.46 | 3.46 | 34.90 | |
| 20 | MANIPULATE TRAVERSING MECHANISM TO DELIVER TRAVERSING FIRE | 100.00 | 3.41 | 3.41 | 38.31 | 10 |
| 15 | SET SIGHT FOR DEFLECTION AND ELEVATION CHANGES DIRECTED BY F | 100.00 | 3.40 | 3.40 | 41.71 | |
| 2 | PERFORM PRE-MOUNT CHECKS ON MOUNT | 100.00 | 3.40 | 3.40 | 45.11 | |
| 12 | PERFORM BEFORE-FIRING SAFETY CHECKS ON MORTAR | 100.00 | 3.40 | 3.40 | 48.51 | |
| 5 | CALIBRATE SIGHT FOR ELEVATION USING M45 BORESIGHT | 100.00 | 3.30 | 3.30 | 51.81 | |
| 7 | CALIBRATE SIGHT FOR DEFLECTION USING M45 BORESIGHT | 100.00 | 3.30 | 3.30 | 55.11 | 15 |
| 31 | REPLACE SIGHT IN SIGHT CASE | 100.00 | 3.21 | 3.21 | 58.33 | |
| 17 | LAY MORTAR IN ACCORDANCE WITH SETTING PREVIOUSLY SET ON SIGHT | 100.00 | 3.03 | 3.03 | 61.35 | |
| 8 | CALIBRATE SIGHT FOR DEFLECTION BY AIMING CIRCLE METHOD | 100.00 | 3.00 | 3.00 | 64.36 | |
| 32 | PARTICIPATE IN DISMOUNTING MORTAR | 100.00 | 2.98 | 2.98 | 67.34 | |
| 21 | MANIPULATE ELEVATING MECHANISM TO DELIVER SEARCHING FIRE | 100.00 | 2.93 | 2.93 | 70.27 | 20 |
| 18 | CHANGE LAY OF MORTAR IN ACCORDANCE WITH MODIFIED SUBSEQUENT | 100.00 | 2.79 | 2.79 | 73.06 | |
| 26 | CORRECT FOR DISPLACEMENT OF MOUNT DUE TO SHOCK OF FIRING | 100.00 | 2.72 | 2.72 | 75.79 | |
| 28 | ASSIST ASSISTANT GUNNER IN REMOVING MISFIRE | 85.71 | 3.17 | 2.72 | 78.50 | |
| 23 | DIRECT LAY MORTAR | 100.00 | 2.68 | 2.68 | 81.18 | |
| 19 | MANIPULATE ELEVATING MECHANISM AS REQUIRED TO ADJUST FIRE BY | 85.71 | 3.11 | 2.67 | 83.85 | 25 |
| 22 | PARTICIPATE IN PARALLEL LAYING OF PLATOON MORTARS | 85.71 | 3.06 | 2.62 | 86.48 | |
| 24 | MOVE MOUNT AND BARREL TO MAKE LARGE DEFLECTION OR ELEVATION | 100.00 | 2.58 | 2.58 | 89.06 | |

4.2

GUNNER

(cont'd)

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 29 | LAY MORTAR FOR FINAL PROTECTIVE FIRE (FPF) DEFLECTION AND EL | 85.71 | 2.80 | 2.40 | 91.46 | |
| 33 | ASSIST IN MAINTAINING MORTAR | 85.71 | 2.66 | 2.28 | 93.74 | |
| 27 | ATTEMPT TO FIRE MISFIRE | 71.43 | 2.96 | 2.11 | 95.85 | 30 |
| 1 | CARRY MORTAR MOUNT | 85.71 | 2.19 | 1.88 | 97.73 | |
| 6 | CALIBRATE SIGHT FOR ELEVATION USING M2 COMPASS | 57.14 | 2.69 | 1.54 | 99.27 | |
| 16 | DETERMINE, BY REFERENCE TO FIRING TABLE, ELEVATION AND CHARGE | 57.14 | 2.36 | 1.35 | 100.00 | 33 |

4.2

ASSISTANT GUNNER

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 1 | PERFORM PRE-MOUNT CHECKS ON BARREL | 100.00 | 8.63 | 8.63 | 8.63 | |
| 6 | LOAD ROUND INTO BARREL | 100.00 | 8.63 | 8.63 | 17.26 | |
| 8 | ASSIST GUNNER IN REMOVING MISFIRE | 100.00 | 8.63 | 8.63 | 25.89 | |
| 9 | PASS MISFIRED ROUND TO 1ST AMMUNITION HANDLER | 100.00 | 8.63 | 8.63 | 34.52 | |
| 10 | ASSIST GUNNER IN MOVING MOUNT AND BARREL WHEN LARGE DEFLECTION | 100.00 | 8.63 | 8.63 | 43.15 | 5 |
| 12 | ASSIST IN DISMOUNTING MORTAR | 100.00 | 8.63 | 8.63 | 51.79 | |
| 13 | ASSIST IN MAINTAINING MORTAR | 100.00 | 8.63 | 8.63 | 60.42 | |
| 2 | PARTICIPATE IN MOUNTING MORTAR | 100.00 | 7.74 | 7.74 | 68.15 | |
| 3 | PERFORM BEFORE-FIRING SAFETY CHECK ON BARREL | 100.00 | 7.74 | 7.74 | 75.89 | |
| 11 | SWAB BARREL BORE ON COMPLETION OF FIRE MISSION | 100.00 | 6.96 | 6.96 | 82.86 | 10 |
| 4 | SWAB BARREL BORE BEFORE FIRING BEGINS | 100.00 | 6.90 | 6.90 | 89.76 | |
| 5 | CHECK ROUND RECEIVED FROM 1ST AMMUNITION HANDLER FOR PROPER | 100.00 | 5.95 | 5.95 | 95.71 | |
| 7 | SWAB BARREL BORE AFTER EACH 10 ROUNDS FIRED | 100.00 | 4.29 | 4.29 | 100.00 | 13 |

4.2

2ND AMMUN. HAND

COUNT OF TASKS LISTED . . . . . .
CUMULATIVE AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . .
ORDERED BY --- AVERAGE PERCENT PART OF JOB BY ALL MEMBERS . . . . . .
AVERAGE PERCENT PART OF JOB BY MEMBERS PERFORMING . . . .
PERCENT OF MEMBERS PERFORMING . . . . . .

| TASK | TASK TITLE | % | % | % | % | N |
|---|---|---|---|---|---|---|
| 2 | MAINTAIN AMMUNITION | 80.00 | 31.44 | 25.15 | 25.15 | |
| 1 | POSITION AIMING POSTS AS DIRECTED BY GUNNER | 80.00 | 28.14 | 22.51 | 47.66 | |
| 4 | PERFORM DUTIES OF 1ST AMMUNITION HANDLER | 80.00 | 26.44 | 21.15 | 68.82 | |
| 3 | RETRIEVE AIMING POSTS | 80.00 | 13.98 | 11.18 | 80.00 | 4 |