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

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# Assessment of Multiple Launch Rocket System (MLRS) Training Strategy

**G. David Hardy, Jr., and James H. Banks**
U.S. Army Research Institute

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     When the Standards in Training Commission (STRAC) Weapons Program Review determined the Multiple Launch Rocket System (MLRS) training strategy needed validation, the Individual and Unit Training Division (IUTD), Directorate of Training and Doctrine (DOTD), U.S. Army Field Artillery School (USAFAS), requested that the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) perform a survey of MLRS training in units.  Structured interview guides and supplementary questionnaires were used to collect data on training programs; unit conditions affecting training management and unit performance; unit performance on tasks; troop and command satisfaction with Training and Doctrine Command (TRADOC) training-support products; and tips for trainers and training managers, based on field reports and observations of what works.  Data were collected from 225 personnel in 98 interviews at five CONUS Forces Command (FORSCOM) posts where MLRS units are assigned.  The units visited included two MLRS battalions and three separate batteries.  Data were collected from personnel at all echelons—from MLRS firing section through battalion or division artillery.

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     In sum, researchers concluded that the current training strategy for
MLRS units generally was not valid and that it needed to be rethought.
     Nine recommendations were made for improving the present training strategy
by taking advantage of our adapting current training organizations, facilities,
materiel, and programs, as well as by developing and implementing innovative
materiel and programs.  Correspondence from USAFAS reports that actions con-
sonant with these recommendations have been taken to make training publications
and gunnery and maneuver training strategies more readily available.

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# Assessment of Multiple Launch Rocket System (MLRS) Training Strategy

**G. David Hardy, Jr., and James H. Banks**
U.S. Army Research Institute

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The mission of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) Field Unit at the Presidio of Monterey, California, is to conduct research to develop and test methods that permit unit performance assessment, field validation of unit training practices, and development of methodology to support analysis and trends of Army requirements, unit performance, and training practices.  The Standards in Training Commission Weapons Program Review determined that the Multiple Launch Rocket System (MLRS) training strategy needed validation.  In response, the Individual and Unit Training Division, Directorate of Training and Doctrine, U.S. Army Field Artillery School (USAFAS), requested that ARI perform a survey of MLRS training in units in the continental United States to provide empirical information to validate the strategy.  This research was performed under a Memorandum of Agreement that covered the assessment of the MLRS training strategy specifically and that was signed by the Assistant Commandant, USAFAS, and the Commander, ARI.  The results were presented to the Commandant, USAFAS, in May 1991.

EDGAR  M.  JOHNSON
Technical Director

# ASSESSMENT OF MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) TRAINING STRATEGY

## EXECUTIVE SUMMARY

### Requirement:

To provide empirical data for validating critical aspects of Multiple Launch Rocket System (MLRS) training strategies. Such data include descriptions of training programs now in use (requirements, content, guidance, frequency, scheduling); descriptions of unit conditions affecting training management and unit performance (personnel fill and stability, resources, equipment, use of time); indexes of how well the unit performs tasks (ratings, scores, proficiency levels); expressions of troop and command satisfaction with Training and Doctrine Command (TRADOC) training-support products, Army Mission Training Plan ((AMTP), training aids and devices, new school graduates); and tips for trainers and training manager based on field reports and observations of what works.

### Procedure:

Data collection instrument were developed based on MLRS doctrinal and technical publications, a 3-day intensive short course provided by the U.S. Army Field Artillery School (USAFAS), and close liaison with Individual and Unit Training Division (IUTD) and the Gunnery Department. Structured interview guides and supporting materials were prepared for all echelons, with cross checks and verifications built in across echelons.

Data were collected from 225 personnel in 98 interviews at five continental United States (CONUS) Forces Command (FORSCOM) posts where MLRS units are assigned. The units visited included two MLRS battalions and three separate batteries. Data were collected from personnel at all echelons--from MLRS firing section through battalion or division artillery. Primary data sources were structured interviews and questionnaires. In addition, documentary materials on training programs, performance assessment techniques, training resources, unit personnel characteristics, and training guidance were gathered when they were available.

**Findings:**

Empirical evidence is not available for establishing performance standards; at the time of the survey, the Army Training and Evaluation Program (ARTEP)-Mission Training Plan (MTP) was not routinely used and no records were kept with which to establish that units were attaining required performance standards. While MLRS soldiers and leaders were generally confident in their abilities to perform satisfactorily, it cannot be said for certain that their confidence is justified.

MLRS units do not presently train as they will fight in field training exercises, in live-fire training exercises, or in command post exercises.

MLRS separate batteries bear extraordinary training responsibilities at their level, with minimal if any guidance from above in training management, formulation of training objectives, and design and execution of training programs.

MLRS batteries face a wide variety of MLRS-specific problems, including shortages of resources (e.g., rockets, training areas, and ranges suitable for both live-fire and non-live-fire), high troop turnover rates, low equipment reliability, and limited access to training support documentation and materiel.

All respondents agreed that live-fire training is important, though they were not in agreement about how many rockets were required. Most respondents felt that the present annual allocation of 108 rockets per battery was the minimum required for achieving and maintaining proficiency. Some argued for more rockets, others for fewer. (This survey did not resolve the issue of the number of rockets that should be fired per year to acquire and sustain a satisfactory state of readiness. It is clear from the information collected, however, that in addition to costs, the decision makers need to consider the training benefits to be accrued under the conditions (of turnover, of materiel reliability, of organizational priorities) that currently exist in units.)

In sum, the findings reveal that

- The training strategy for MLRS units generally is not valid.

- The MLRS training strategy needs to be rethought. Considerable ingenuity will be required to train better and more cheaply; development of innovative training support products (TADSS) as well as imaginative and flexible use of available equipment/materiel are critical; and integration of a cost-effective live-fire block into the training strategy is urgently needed.

- Innovative commanders who fully understand the requirements for training MLRS units are required--especially in separate batteries where the Battery Commander operates without the support and supervision available in a battalion. Reports from all echelons stated that the needs, requirements, and capabilities of the MLRS were generally not well understood. If this perception is correct, this factor limits the amount and quality of training guidance, supervision, and support commanders can provide the battery and ultimately limits commanders' abilities to employ the system operationally.

## Utilization of Findings:

These findings bear on a number of training issues. First, they directly support the need for the development of an MLRS training strategy that is integrated into division, brigade, and battalion training planning and that itself integrates the various aspects of MLRS operations into a workable, cost-effective plan. The recent publication of the ARTEP will not, by itself, solve this problem. Second, they offer lessons learned for unit leaders from the experiences of their colleagues in arms. Third, they have a bearing on the development of the Combined Army Training Strategy (CATS) by which MLRS units will more effectively and efficiently forecast and meet their training requirements within operational and resource constraints. And fourth, they suggest methodologies for subsequent studies in the validation of training strategies in the remaining combat arms.

Acknowledging receipt of the information contained in this report and closing out the effort, the Assistant Commandant, USAFAS, noted, consonant with the recommendations of the report, "training problems caused by a shortage of training publications have been eliminated with the publication of the MLRS Battery and Battalion ARTEP Missing Training Plans...." Further, "our Fire Support Training Strategy task force has developed MLRS gunnery and maneuver training strategies," and "combined with the information and lessons learned during Desert Shield and Desert Storm, [they] eliminate the need for Phases II [development of candidate training strategies] and III [tryout of training strategies] of the study." (Memorandum, USAFAS, ATSU-DTU, 18 June 1991, subject: Termination of Memorandum of Understanding between USAFAS and ARI concerning Assessment of Multiple Launch Rocket System Training Strategy)

## GLOSSARY OF ACRONYMS AND ABBREVIATIONS

AAR      - after action review
AIT      - advanced individual training
AO       - area of operations
APFT     - Army physical fitness test
ARTEP    - Army training and evaluation program
ASI      - additional skill indicator
CALFEX   - combined arms live-fire exercise
CATS     - combined arms training strategy
CFX      - command field exercise
CPX      - command post exercise
CSM      - command sergeant major
CTT      - common task training
CTX      - combined training exercise
DIVARTY  - division artillery
DOTD     - Directorate of Training and Doctrine
DS       - direct support
ECCM     - electronic counter-countermeasures
FCS      - fire control system
FCX      - fire coordination exercise
FDS      - fire direction system
FM       - field manual
FTX      - field training exercise
GS       - general support
GSR      - general support reinforcing
HEMTT    - heavy expanded mobility tactical truck
IUTD     - Individual and Unit Training Division
JTX      - joint training exercise
LFX      - live fire exercise
LLM      - launcher-loader module
LOGEX    - logistical exercise
LTA      - local training area
MACOM    - major Army command
MAPEX    - map exercise
METL     - mission essential task list
MILES    - multiple integrated laser engagement system
MOPP     - mission-oriented protection posture
MOS      - military occupational specialty
MTP      - missiom training plan
NCO      - noncommissioned officer
NETT     - new equipment training team
NTC      - National Training Center
OJT      - on-the-job training
OPTEMPO  - operating tempo
PAC      - Personnel and Administration Center
PCS      - permanent change of station
PFC      - private first class
PLDMD    - platoon leader's digital message devive
PMCS     - preventive maintenance checks and services

| | | |
|---|---|---|
| S8 | – | ASI for unit-level LLM/FCS mechanic |
| SFC | – | sergeant first class |
| SGT | – | sergeant |
| SIMNET | – | simulation network |
| SME | – | subject matter expert |
| SOP | – | standing operating procedure |
| SPLL | – | self-propelled loader-launcher |
| SQT | – | skill qualification test |
| SSG | – | staff sergeant |
| STX | – | situational training exercise |
| T&EO | – | training and evaluation outline |
| TACFIRE | – | tactical fire direction system |
| TADSS | – | training devices, simulators, and simulations |
| TC | – | training circular |
| TDY | – | temporary duty |
| TEC | – | Training Extension Course |
| TEWT | – | tactical exercise without troops |
| TM | – | technical manual |
| USAFAS | – | U.S. Army Field Artillery School |
| USARI | – | U.S. Army Research Institute for the Behavioral and Social Sciences |

ASSESSMENT OF MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) TRAINING
STRATEGY

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# ASSESSMENT OF MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) TRAINING STRATEGY

## INTRODUCTION

### General

This report presents findings of a survey of training in U. S. Army Field Artillery units equipped with the Multiple Launch Rocket System (MLRS). The survey was sponsored by the Individual and Unit Training Division (IUTD), Directorate of Training and Doctrine (DOTD), U.S. Army Field Artillery School (USAFAS), Fort Sill, Oklahoma. The impetus for the survey was the Standards in Training Commission (STRAC) Weapons Program Review for the MLRS, which found that the training strategy for the MLRS needed to be validated. Funding was provided by STRAC. The study was carried out by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), Presidio of Monterey, California Field Unit, with contractor assistance from Applied Science Associates, Inc., Butler, Pennsylvania.

### Organization of the Report

This report includes an introduction to the MLRS, a description of the methods used in the survey, the results, and a summary of findings organized around the training management guidance contained in Field Manual (FM) 25-100, _Training The Force_. As the source of current Army training doctrine, FM 25-100 provides the basis for validating the training strategy, as well as for identifying its shortfalls and suggesting fixes as needed. Discussion of the results and findings is followed by conclusions and recommendations. The sample is described in Appendix A. Survey instruments and database are presented separately in ARI Research Note, _Data Collection Instruments and Database for Assessment of MLRS Training Strategy_.

### Background

The multiple launch rocket system (MLRS) is a nonnuclear, all-weather, highly mobile, indirect fire rocket system. It is designed to complement cannon artillery, to attack the enemy deep, and to strike at counterfire, air defense, and high-payoff targets. It can, for instance, supplement other fire support systems by engaging dense mechanized targets during surge periods. The MLRS battalion is a corps asset and will be attached to a field artillery (FA) brigade or to division(s) within the corps. The MLRS battery is organic to infantry, armored, motorized, and mechanized divisions. Light infantry divisions may receive MLRS support from corps assets.

The MLRS units normally are assigned missions of general support (GS) or general support reinforcing (GSR). If assigned a GSR or reinforcing (R) mission, the force artillery headquarters must accommodate the MLRS unit limitations by modifying the standard tactical mission. A mission of direct support (DS) is not appropriate for MLRS units because of the system characteristics and the unit structure.

MLRS operations are characterized by rapid emplacement, engagement, and displacement (shoot-and-scoot tactics) of widely dispersed launchers. The system consists of the rocket launcher M270 mounted on a lightly armored tracked carrier vehicle; launch pod and containers; ammunition supply vehicles M985, with M989 trailers; and a command, control, and communications system that includes the fire control system located on the launcher, the firing platoon leader's digital message device (PLDMD) in the platoon leader's M577 vehicle, and the fire direction system (FDS) at the platoon, battery, and battalion levels.

All MLRS firing batteries are organized virtually identically whether assigned to a DIVARTY or an MLRS battalion. The MLRS firing battery consists of a headquarters platoon, an ammunition platoon, and three firing platoons. The battery headquarters platoon consists of the battery headquarters, mess, supply, maintenance, and communications sections. Each of three firing platoons has a platoon headquarters and three firing sections. The ammunition platoon has a platoon headquarters and three ammunition sections, each with six trucks and trailers. Each of the three firing platoons calls for one 13B light missile field artillery officer, platoon leader; three 13P fire direction specialists; and twelve 13M MLRS crewmembers. The one ammunition platoon calls for one 13B platoon leader and thirty-eight 13M.

MLRS, introduced into the Army in 1982, is the first FA system to incorporate on-board self-location, directional control, ballistic computation, and digital communications systems in one piece of equipment. The complexities of the system, as well as the heavy requirement for logistical support (two heavy tactical trucks with heavy trailers per launcher), suggest substantial training requirements. After the system's nearly eight years in the inventory with no approved ARTEP, a requirement was identified for validating the current MLRS training approach.

At the request of USAFAS, ARI representatives met with representatives of IUTD, DOTD, and the Gunnery Department to clarify the issue and to develop a plan for the conduct of a study leading to the validation of the current MLRS training approach.

## Study Goals

The goals of the study were to provide

1.  Empirical data on training programs now in use in units. Subtopics of interest included training content, frequency of training and relationships to major events or cycles, training guidance, and training planning and scheduling.

2.  Quantitative descriptions of unit conditions affecting training management, and unit performance. Subtopics of interest included personnel stability and fill, equipment reliability and maintenance, resource availability, training realism, and effective use of training time.

3.  Empirical data to support analyses of effects of programs and conditions on how well the unit performs. Subtopics of interest included the current level of proficiency and the techniques and methods used to assess individual and collective performance.

4.  Direct reports from the field regarding troop and command satisfaction with TRADOC products. Subtopics of interest included the ARTEP Mission Training Plan, training devices and aids, and the capabilities of new school graduates coming into the unit.

5.  Tips for trainers and training managers, based on field reports and identification of training programs that led to high unit capabilities with an economical use of resources.

## METHOD

### Data Collection

Data were collected between January and June, 1990, from personnel at five Continental United States (CONUS) Forces Command (FORSCOM) posts where MLRS units are assigned. A team of interviewers visited two MLRS battalions and three separate batteries to document how unit training is being conducted. The team spent approximately five days at each post to determine what training had been accomplished in the past year, how the training was managed and executed, what training detractors were encountered, and how they were dealt with. Investigations covered training from individual through battery levels, with emphasis on firing sections and platoons.

Data were collected from personnel at all echelons--from MLRS Firing Section through Battalion or Division Artillery as appropriate. In order to examine MLRS training from the perspectives of all organizational echelons, the same topics and subtopics were often addressed at more than one echelon.

Data were collected by structured interview and questionnaire, and by gathering of documents at each location. Data collection instruments were developed after review of MLRS doctrinal and technical publications and a three-day intensive short course provided by the USAFAS Gunnery Department (MLRS Branch). Survey instruments were reviewed by IUTD and the Gunnery Department prior to use.

Structured interview guides were prepared for battery, firing platoon, ammunition platoon, firing section, and ammunition section as well as for Commander, Executive Officer, and S-1, S-3, and S-4 of the batteries' higher units (MLRS battalion or division artillery, depending on the post). The interview guides are included in an ARI Research Note containing the interview database developed as in paragraphs below.

Hand-out questionnaires were used to gather data on training resource availability, training detractors, and unit task proficiency. Tasks included on each survey were identified by USAFAS subject-matter experts (SMEs) as critical to unit combat performance. Two perspectives on task proficiency were sought at each echelon: A self-rating by the senior personnel at that echelon, and an assessment of the echelon by senior personnel at the next higher echelon. For example, battery performance was assessed on a task-by-task basis by Battery Commanders and Operations Officers, as well as by the Commander or S-3 of the parent echelon; platoon performance was assessed by the Platoon Leader and Platoon Sergeant as well as the Battery Commander or Training Officer; etc. Questionnaires used are found in the Research Note along with interview guides and interview database.

During the visits, 98 interviews were conducted, including a total of 225 unit personnel. All interviews at echelons above battery were conducted individually; most of the remaining interviews were conducted in groups with two or more interviewees and two or more interviewers. The largest number of personnel interviewed in a group was seven.

Available documentary information on training programs, performance assessment techniques, training resources, unit personnel characteristics, and training guidance was gathered at each post.

## Data Reduction

Interview data were transcribed and each statement coded by topic and source. The database thus formed is presented separately, along with the instruments used in the data collection, as ARI Research Note, Data Collection Instruments and Database for Assessment of MLRS Training Strategy.

Information from the hand-out surveys on task proficiency was summarized by assigning a score from 1 (lowest) to 5 (highest) to the rating provided by each respondent on each task. The scores were then combined and averaged to give a composite proficiency score in operations, logistics, and NBC tasks.

## RESULTS

### Training Programs Now in Use in Units

#### Training Management

Training guidance to and from the battery. Table 1 shows the reported training guidance provided to the battery and provided from the battery to platoons and sections. At all posts, batteries were provided with long range calendars, range schedules, and resource allotments. In all cases, detailed training management is decentralized to the battery. Post 2 reported that it had only decentralized training management after each battery had successfully completed an external ARTEP. Only Post 2 reported that the higher echelon provided training objectives and scheduled battery participation in major external training exercises. This post also has a strong training philosophy based on how the unit is expected to be employed, emphasizing the responsibility of the section chief and junior leaders, as well as training with a high degree of realism. This philosophy was conveyed verbally and through SOPs and procedures which had been developed. Post 1 reported that they had developed METLs, critical tasks, and battle drills down to the section level. This post strongly emphasizes the development of individual and crew proficiency. Posts 3 and 4 report that they provide little training guidance to the battery. Personnel from these posts, and Post 5, also reported that they received very little or no training guidance from the battery level, with training management essentially decentralized to the platoon and section levels. This may be due to lack of expertise at the battery commander level. One DIVARTY respondent said "...just now we are starting to get captains in with lieutenants' experience with MLRS. When we're selecting a Battery Commander we have to do with sufficient lead time that we can send him off ... for school. The average BC, in the past anyway, has not been that knowledgeable to come right in and take command."(57)

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# Table 1

## Training Guidance

| Guidance To Battery | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Schedule/Calendar | Yes (01) * | Yes (24,25) | Yes (41) | Yes (57) | Yes (81) |
| Ranges/Resources | Yes (01) | Yes (24) | Yes (41) | Yes (57) | Yes (81) |
| Major Ext Training Events | No (01) | Yes (24) | | | |
| Strong Trng. Philosophy | | Yes (24) | | | |
| Mgmt Decent. to Btry | Yes (01) | Yes (24) | Yes (41) | Yes (57) | Yes (81) |
| Qtrly Training Meeting | Yes (01) | Yes (27,36) | | Yes (57,59) | |
| Weekly Trng Meeting | Yes (01) | Yes (27) | | | |
| METL | Yes (01) | Yes (24) | | | |
| Training Objectives | | Yes (26,27) | | No (57) | No (81) |
| Pubs (SOPs, Ltrs, etc) | | Yes (24) | Yes (41,45) | | |
| Amount of Guidance | | | Little (41,44,45) | Little (61,62) | |

| Guidance From Battery | | | | | |
|---|---|---|---|---|---|
| Schedule/Calendar | Yes (07,12) | Yes (30) | No (46) | Yes (67) | |
| Weekly Trng Meeting | Yes (15) | Yes (26,27,31,35) | | Yes (67) | |
| Training Objectives | | From Bn (27) | | Yes (59,67) | Yes (83,88) |
| Training Plan | | Yes (26) | | | |
| Evaluation/Criteria | Yes (11,12,14) | | | No (67) | |
| Tasks/Drills | Yes (01) | | | | |
| Amount of Guidance | | | None, very little (46,47) | Very little (67,75) | Very little (88,96) |

* Numbers in parentheses are the respondent's interview numbers.


Training responsibilities. Responses presented in Table 2 identify the sources of, or the responsibilities for preparation of, training and evaluation plans at battery level and below. All posts report that the battery has a training schedule, with three reporting shorter-range platoon schedules. Posts 1 and 2 report battalion- and battery-developed METLs, with platoons

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developing associated tasks. All posts report training requirements are input by the section chiefs, although some section chiefs reported that their requests were rarely actually incorporated into the training schedules. Respondents from Post 3 reported that there was no battery training plan: "We've worked up training schedules on our own. The battery supports us as far as putting it on the training schedule."[48]; "Training plans? There is no plan in position. A calendar is not a plan."[45]. One section chief said, "I feel helpless. There are many problems I can't correct until we go to the field. Sgt's time is really the only time I have to do anything."[50].

Table 2

Training Responsibilities

| Training Responsibilities | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Schedule | Btry, 7 wks out (01,03) | Btry | Plt (48) | Btry,long-range (59) Plt, 4-5 wks out (61,67) | Btry, long-range (79,83) |
| Source of METL | Bn/Btry (01) | Bn/Btry (24) | | Previous Btry Cdr | |
| Associated Tasks | Plt (12) | Plt (12,24) | | | |
| Training Plan | | Yes (26) | No (45,48) | | |
| Inputs from Section | Yes(08,09,11,17,19) | Yes (25,26,28,30,36,38) | Yes (45) | Yes (76) | Yes (98) |
| Section Input Followed | No (08,09,14) | | | Sometimes (75) | No (84) |
| Evaluation | Btry Qtr Internal ARTEP (01) | Btry External ARTEP (01) | Only conducts Plt training | None from Btry (62,67) Btry External ARTEP (57) | Battery External ARTEP (89) |

Respondents from Post 4 also reported strong dissatisfaction: "It's hard to get our plans blessed by DIVARTY because we are not priority. It's like pulling teeth to get land to train in. DIVARTY doesn't understand what we need. They don't understand us."[61]; "The Battery Commander doesn't go to the field so there

is no emphasis on training."[62]; "We don't get a lot [of training guidance from the battery], and when we do it's very broad. Basically training is left up to us. We do get a long range calendar. There is very little training guidance from the Battery Commander. We use the ARTEP and the Mission Training Plan. We try to plan a month ahead by having weekly meetings at the battery level, but there are no clear cut objectives and no evaluation of whether the objectives are being met. And we don't have any after action reports either."[67]

Training cycles and train-the-trainer courses. Table 3 presents the responses on use of training cycles and train-the-trainer courses at the posts. Most used some form of (red-green-amber) training cycle, although Post 3 said that the MLRS battery was always in the amber status. None of the posts reported extensive efforts to train-the-trainer.

Table 3

Post Policies on Training Cycles and Courses to Train the Trainers

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Training Cycle | | Yes[24,27,31,35] | Always amber[41,44] | About a month each [59] Only 2 green cycles a year[62] Couldn't get land to train on in last green [62] | Two greens a year [83] |
| Train-the-Trainers | No training program to train NCO's how to train their troops[18] | Combat Life Savers School, live agent train-ing, etc.[26] NCO marks-manship training[31] We do a poor job of training the trainer [35] | LTs have OPDs. 1st Sgt has NCOPD[44] Never had a class on pre-paration[50] | No [59,61,62] | No [81] Ldrship Programs for SPC, SGT, SSG, SFC Officer's Counseling Course[83] |

Documents used to plan training. Table 4 shows the documents reportedly used in planning training. Generally, a variety of materials were used. At the time of this survey (January-June 1990), the final draft of the Mission Training Plan for MLRS batteries was not widely available in the units. Also, some other documents were frequently unavailable. (See Resources, below.)

Training Execution

Weekly training schedules. Each of the posts reported that they routinely scheduled approximately one to two days on equipment maintenance. All but Post 4 reported that section/team training (drills and "Sergeant's Time") regularly occurred for five to six hours once a week. Personnel at Post 4 reported that they used to have such a period set aside but no longer[68] or that it was abused: ("...we abuse Sergeant's Time. We are supposed to have half a day just to work with the section but it doesn't work. They will decide how to use your Sergeant's Time"[70]). Most of the posts reported that they attempted, with varying success depending on taskings, to have some classes, cross training, SQT and CTT training, and training in a local training area another one-to-two days a week.

Training contents/frequencies in last 12 months. Table 5 presents the responses on the types of training delivered and how often the training had been given/received in the past year's time. Only two of the units had elements which had gone to the National Training Center at all; only one had gone in the past year. None reported having participated in exercises outside of continental United States. Post 2 reported the most extensive training. This included a corp CPX which incorporated issues of MLRS logistics and supply, deployment exercises, participation in exercises with other field artillery units, and battalion, battery, and platoon field training exercises (FTX) and situational training exercises (STX). This post also reported field exercises with maneuver units, which forced the participating units to consider issues of terrain management and information exchange. The batteries conducted FTXs more often and for a longer number of days than those at other posts. Post 3 reported the least field training, with no battery FTXs and platoon FTXs only one or two times a year.

All units reported crosstraining of launcher crews and of firing and ammunition crews (although with varying frequencies and amounts). Post 3 and 4 had integrated ammunition sections into the firing platoons to ease the effects of low personnel fill and "to facilitate cross training". All reported training on reloading launchers in the field from pods which had been placed on the ground. None reported training in the field on reloading from ammunition trucks and trailers, because of the danger. Some units said they did such training in garrison.

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Table 4

Documents Used to Plan Training

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Divarty/ Bn | Just now received the Bn ARTEP MTP$_{(1)}$ We had to make up our own evaluation materiels because manuals were not out yet$_{(3)}$ | ARTEP MTP's pretty well laid out$_{(24)}$ We use the ARTEP, TC 6-60, TSOP, Plt Ldrs handbook plus 10 series manuals$_{(24)}$ | | | ARTEP, TC 6-60, ARTEP draft, SQT results$_{(83)}$ |
| Battery | SQT/CTT results$_{(11)}$ | Past ARTEP results, past FTXs, 6-60, MTP, TSOP, Btry SOPs$_{(26)}$ MTP, drills$_{(31)}$ | Battle drills, CTT$_{(44)}$ Everything ARTEPs, SQTs, unit SOPs, TC 6-60, -10s, CTT$_{(41)}$ CTTs, wps quality job books$_{x(45)}$ | ARTEP, unit SOPs, SQTs, TC 6-60 and the MSN training plan. The SQT and the ARTEP are big$_{(61)}$ The MTP is the main document but we need to train the tasks, not just the SQT.We just developed a TSOP based on TC 6-60$_{(62)}$ | |
| Platoon | Bn TSOP, FMs, MTP for standard, critical task list and METL$_{(12)}$ | PL Handbook, CTT Book, ARTEP manual$_{(27)}$ ARTEP$_{(32)}$ | ARTEP task$_{(46)}$ We have draft copies and one hand book downstairs that has lesson out-lines of task$_{(47)}$ | Everything is stuck on the TC 6-60$_{(63)}$ We use the ARTEP manual and the new trn plan$_{(67)}$ | |
| Section | Have never seen the ARTEP MTP book$_{(09)}$ CT soldier plan$_{(08)}$ | -10s, SOP, $_{(33)}$ | MTP standard$_{(49)}$ | CTT, SQT$_{(64)}$ We have no job books$_{(4)}$ SQT$_{(65)}$ We have trouble getting job books$_{(72)}$ We don't really use job books$_{(76)}$ | Job books$_{(91,94,86,87)}$ SQT scores$_{(83,97)}$ Common Task Book$_{(97)}$ |

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Table 5

Training Contents and Frequency in the Last 12 Months

| Training Content | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| NTC | No [01] | No [24,26,34] | Yes [39,49] | 18-24 mos. ago [57,59] | No [81] |
| Reforger/OCONUS | | No [21,24,26,34] | | No [57] | |
| Corps CPX | | Yes [21] | | Yes [57] | |
| with other FA units | | 3 times [24] | | | Rarely [81] |
| with maneuver units | | Yes [24] | | | |
| Deployment Exercises | | 2 times [21] | | | |
| Bn External ARTEP | No [01] | No [21] | | | |
| Bn FTX | No [01] | Yes [31] | | | |
| Btry External ARTEP | No [01] | Yes [27] | No [41] | Yes [57] | Yes [89] |
| Btry FTX | 1 per qtr [01,05,17] | Every 4-6 weeks [24,26,31] | No [44,45,46,51,52] | 1 per month [57,61] | 1-2 per qtr [81,91,95,97,98] |
| No. days, Btry FTX | 5-7 days [01] | 5 [26,31] | | 3 [68] | 2-3 [81,91,95,97,98,85,89] |
| Btry STX (1 day) | | Yes [24] | No [44,45,46,51,52] | | |
| Plt STX/FTX | | Yes [26] | 1-2 per year [24,55] | Yes [61,62] | 1 per month [91] |

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**Table 5**

Training Contents and Frequency in Last 12 Months (cont.)

| Training Content | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Live Fire | 1 per qtr [01,10] | 1 per qtr [25,27] | 3 per year [47] | 1 per 4-6 months [71,74] | 1-2 per qtr [81,85,87] |
| Cross Train, SPLL | Yes [01,05,06,07,17] | Yes [27,28,30,32,37,38] | Yes [46,47,51,52] | Yes [69,74] | Yes [84,95] |
| Cross Train, Fire/Ammo | Yes [12] Before SQT [09,16,17] | Yes [27,31,32,34,36,38] | Yes [44,47,56] | Yes [69,67,71] | Yes [83,84,92,95] |
| Train Reload, off ground | 1 per qtr [07] | Yes [33,37] | Yes [46,51,52,53,54] | Yes [69,69,77,78] Seldom/Little [64,70,72,74,76] | Yes [85-87,89,97,98] |
| Train Reload, off truck | No [18] | No [33,37] | No [44,45,46,51,52] | | No [93,95,97,98] |

Field training was reported to be heavily dominated by fire mission training even when a full battery FTX was conducted. Some respondents said they felt this did not leave time for other important training. Post 1: We don't do ECCM[12]. Post 2: Little time for other task training[29]. Post 3: Nuclear training is a problem because we don't train as a battery[46]; The battery doesn't have an NBC plan[47]. Post 5: (We) never train on whole NBC routine. It would have to be put in a FTX[98].

## Unit Conditions Affecting Training, Training Management, and Performance

### Stability

Table 6 presents MLRS personnel turnover rates at the five posts. Units reported quarterly or monthly turnover rates that projected to annual rates ranging from 50% to 175%. Separate batteries reported a higher average turnover rate than batteries in battalions. Commanders at Post 4 reported the loss of three First Sergeants in a six month period and of three Personnel and Administration Center (PAC) NCOs in a four month period.

Commanders and Leaders alike reported the following effects of these high turnover rates:

Unsafe conditions in the field with large numbers of new men manning the equipment[57]

Requirement for more frequent safety-certification testing[15]

Impacts on both state of training and cohesion[92]

Requirement for repetitive training on basics to train constantly new teams[6]

Constraint to effective cross-training imposed by soldiers' lack of experience in own jobs[54]

Ammunition platoon is especially unstable as replacements are drawn to fill firing platoon[77]

Table 6

Turnover Rates

| | Post | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | Bn Average | Sep Btry Average |
|---|---|---|---|---|---|---|---|
| Turnover | 12%/qtr | 11-14%/qtr | 13-16%/ month | 10-12%/ month | 14%/month | | |
| Annual Projected | 50% | 150% | 175% | 130% | 170% | 100% | 160% |
| Source | Bn S1 [2] | Bn XO [23] | Divarty S1 [40] | Divarty Cdr [57] | Battery Cdr [38] | | |

Personnel Fill

Table 7 presents personnel shortages versus authorizations at the two MLRS battalions and three separate batteries. All units for which data are available report shortages (of 19% to 52%) in Low Density MOS and four of five report shortages (of 2% to 38%) in High Density MOS. With the exception of the DIVARTY Commander at Post 5, whose S3 recognized that "DIVARTY is running about 65% of its TO&E"[59], commanders and staff were generally satisfied with their MLRS personnel fills ("no critical shortages"[80], "almost full strength"[43], "94% fill of 13Ms"[58]. Generally, the impact of high-density MOS shortfalls shows up in

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two-man crews in firing platoons and in idle equipment in
ammunition platoons.  One ammunition section chief reported "I
could never take out more than two of six HEMTTs to the field at
one time"[33].

Table 7

Personnel Shortages

|  | Short/Authorized/Percent | | | | |
|  | Post | | | | |
| Positions | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| High Density (Warfighting) MOS | 5/273 2% | 44/273 16% | 0/94 0% | 9/94 10% | 36/94 38% |
| Low Density (Supporting) MOS | 36/146 25% | 29/146 20% | 4/21 19% | --- | 11/21 52% |
| Officers | 6/29 21% | 2/29 7% | 0/6 0% | 0/6 0& | 2/6 33% |
| Totals | 47/448 10% | 75/448 17% | 4/121 3% | --- | 49/121 40% |

## Job/MOS/Rank Match

Table 8 indicates that commanders at four of the five units
said that position fill with lower-than-authorized rank was
common, if not routine, the S1 at Post 2 adding that to do so may
risk the level of leadership required for the job[23].  The S1 at
Post 1, on the other hand, maintained that "it is not necessary
for all that rank in the launcher sections," stating his belief
that "you need a responsible person rather than a more mature
soldier from the rank structure to maintain the launcher and
computer"[2].  Of those soldiers interviewed, 10 of 32 SFC slots
were occupied by soldiers 1 and 2 ranks lower than authorized.
Thirty of 77 SSG section chief slots, 14 of 37 SGT gunner slots,
and 2 of 6 PFC drivers slots were filled by soldiers one or more
ranks lower than authorized.

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Table 8

Positions with Lower-than-Authorized Rank Fills

| Positions | Post 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| SGT Section Chiefs | | a lot (22) | | | |
| SPC Gunners | Routine (2) | | Yes (40) | | |
| PVT - SPC Drivers | Routine (14) | | | | |
| At least one instance | Yes | Yes | Yes | | Yes (80) |

## Commanders' MLRS Experience/Expertise

Sources of comments on the level of MLRS expertise at DIVARTY level are presented at Table 9. An MLRS Battalion Staffer at Post 1 said that the Army as a whole does not understand the MLRS, that MLRS is not played intelligently or realistically in wargames, and that commanders expect things of the system that it can't do (3). DIVARTY Commanders and staff affirm their own lack of sophistication in this area, noting that

> (We) need help to better understand the MLRS, there's not a lot of MLRS expertise in DIVARTY. (The DIVARTY Commander estimated that we're about 70% in our understanding of how MLRS operates.) (79) --Post 5

> There are a few in DIVARTY (and none at Division) who know MLRS and they don't get involved in MLRS training because of their level of expertise. (39,41) --Post 3

> There's no built-in expertise to draw on (at DIVARTY level) to evaluate battery performance (59), to manage the maintenance system (57), or to determine training support (ammo) requirements (57). This lack of sophistication impacts at battery and below, where a Separate Battery Commander remarked that nobody knows what to do with MLRS (63) and a Section Chief added so they treat us as a detail battery (51). Personnel at platoon and section comment on the effects of the lack of MLRS sophistication at higher echelons as it impacts on morale and training opportunities. (85,52,63)

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Table 9

Sources of Comments on Perceived Levels of Expertise at DIVARTY Level

| | Post | | | | |
|---|---|---|---|---|---|
| Comment From | 1 | 2 | 3 | 4 | 5 |
| Bn/Btry | X (3) | X (35) | | X (61) | |
| Divarty Cdr/Staff | | | X (39,41) | X (57,59) | X (79,81) |
| Plt/Sec | | | X (51,55) | X | X |

## Equipment Availability

Table 10 identifies equipment availability problems at Posts 1-5. Availability of (fully operational) organizational equipment was cited as a problem at all posts visited. At Post 1, the Battalion S3 reported that commo is a problem because the radios "are old and have no range"$_{(3)}$; a section chief adds that "on a three-day (Battalion) field problem, (they) turned in 20 radios"$_{(9)}$. At Post 2, a Platoon Leader reported simply "Radio systems are a problem"$_{(36)}$. At Post 3, weapon systems, though operational, are not available for training in the field to avoid

Table 10

Equipment Availabilities

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Problem Cited | Commo-radios are old, have "no range" $_{(3,9)}$ | Trailers being replaced by new unfamiliar ones$_{(34)}$ | Vehicles unavailable for training$_{(53,56)}$ | Commo; radios, NVDs, monitors for RAD survey; No decon truck, ED equipment$_{(77)}$ | Materials or equipment for maintenance;$_{(91)}$ Tools for manually dropping pods;$_{(89)}$ Commo equipment $_{(87)}$ |

what was perceived as inevitable breakdown and loss of operational readiness.$_{(53,56)}$ At Post 4, the problems include commo ("it's the equipment, not the people"$_{(78)}$ along with shortages of a variety of equipment needed to train as well as to operate. At

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Post 5, Section Chiefs reported "there are a lot of mechanical bugs with the commo equipment--both digital and radio (voice)"[87]. At that same post, two Section Chiefs complained of not having the tools or materials to perform certain operational and maintenance tasks[89,91].

## SPLL Operational Reliability

Table 11 shows that every post visited reported that operational failures of launchers was a common problem and that such failures had impacted seriously on training opportunities. Some reported instances were:

> We went to the field with 24 launchers, came back with five operational. (Battalion S3, Post 1)

> Within the first few days in the field, half our vehicles are down. (Platoon Leader Post 2)

> We fired nine rockets at the NTC, but were unable to participate in the force-on-force phase because the equipment broke down. (Section Chief, Post 3)

> We had four launchers at the NTC; at the end of the second day, all four were down. (Section Chief, Post 4)

> At the last LFX, six of nine SPLLs (weapon systems; SPLL = Self Propelled Launcher/Loader) made it to the field, three were able to fire. (Section Chief, Post 5)

Table 11

Posts with Reported SPLL Downtime

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Launchers | X (23,7) | X(26,27,28,32,36) | X(41,45,46,47,49,51) | X (70) | X (94,97) |

## Timeliness of Maintenance Support

Table 12 indicates that respondents at each post expressed the opinion that assigning 27Ms, MLRS Repairmen, to MLRS units would better the timeliness of response to maintenance calls. However, it appears that in general, the improvement in timeliness would be well below 24 hours' worth. In a related

issue, Platoon Sergeants at one post reported that Section Chiefs had begun to try to save time in making repairs themselves without calling for 27M support. Since Section Chiefs do not have the technical training of 27Ms, this practice risks further, and more serious, damage, and may further degrade the timeliness of appropriate maintenance and repair. Far more serious, it would appear, are the long-term unavailabilities of equipment that result from up to six-months' delays in acquiring parts and up to two years delay reported in returning a SPLL to operational status.

Table 12

Timeliness of Maintenance

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Need 27Ms in MLRS Unit | X [4] | X [35] | X [46] | X [71] | X [84] |
| Present short-term response time | Can take hours [1] | Up to 24 hours [28] | "delays" [46] | Hours | 3-4 hours [85] |
| To order parts time | Up to 45 days [4] | 6 months [33] | | "long time" [77] | |
| Long-term down time present | | Four SPLLs down now [35] | Up to two years [49] | | Up to two months [97] |

## Availabilities of Repair Parts

Post 3 was the only unit to report that training was seriously affected by lack of parts, and money for parts. A DIVARTY respondent said that the SPLLs were all very old "and should be in rebuild but the Army has no rebuild program (but are trying to get one off the ground now.) [39] Parts mentioned were cables, hoist cable and drum, actuator arm brackets, and electronic units. One respondent said, "You can't get parts to do a PMCS. Simple nuts and bolts." [50] Cannibalization of parts from one vehicle to repair another, so as to keep as many SPLLs operational as possible, was reported. [46, 49, 55] One DIVARTY respondent reported that the supply system was not working effectively: "The part was ordered and someplace it got lost in the system and we had to do a high-priced call. We do quite a bit right now--high-priced calls." [42] One section chief was very frustrated: "The SPLL has been down for about two years now.

There are two deadline features on the LLM. I can't even get in there to do a PMCS on my SPLL. There are 3-4 deadline features on the carrier alone. There are two safety violations in there. Harmful gases are coming out of the final drive door. I keep hearing rumors that we are going to get new SPLLs but rumors are rumors. All I know is that I'm not combat ready because we don't have the money to buy a damn part. I can't go to war with what I got."[49] One platoon-level respondent reported that when he went to NTC the direct support people did not have the necessary parts "so with three SPLLs down we just sat there."[47]

At the other posts the problems were not as crippling. Battalion respondents at Post 1 reported a general problem getting parts, especially cables.[02, 04] Respondents at Post 2 reported that track sprockets were a big shortage item[25, 23]. The excessive wear on the sprockets was thought to be due to the rigorous training program.[25] Respondents at Post 4 reported that boom controllers and shock absorbers were hard to get[60], as were the external parts of ammunition trucks and trailers which were prone to breakage from maneuvering in trees.[78] One respondent said that when his unit went to the NTC the four SPLLs taken were down for lack of parts by the end of the second day.[70]


## Taskings

A Battery Commander at Post 1 observed that getting people to training is the hardest part of training[5]. His colleagues at Posts 2, 3, and 5 agreed, citing details and maintenance[35], outside interference[45], and details and taskings as (their) most difficult training problems[83]. Units at all of the five Posts visited reported that they "caught a lot of details", with four of the five saying that taskings were likely to come down from higher during any phase of the mission/training/support cycle. In both Battalions, the ammunition platoons reported feelings that they were used as detail platoons; in two of the three separate batteries, the batteries expressed that same feeling, noting that taskings, especially those that come during the training cycle, lead to splitting sections which not only interrupts training but weakens cohesiveness within crews[92]. Finally, one separate battery reported that, in interrupting the training periods, the heavy taskings had created an attitude problem among soldier's that was reflected in low common task performance[85].

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Table 13

Taskings

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Training preparation for collateral duties | X | | X | | X |
| Support requirements during training cycle | X | X | X | | X |
| Funeral details | X | | X | | |
| Ammo platoon used as detail platoon | X | X | | | |
| ROTC & RC training support | | X | X | | |
| Running ranges | | X | | | |
| Post clean-up | | X | X | | |
| Flag detail | | | X | | |
| Saluting Battery | | | X | | |
| Treats us like detail battery | | | X | | X |
| Dressing up vehicles | | | X | | X |

## Resources

Rockets. Table 14 shows a split in opinion on whether the current annual allocation of rockets for live fire is adequate. The senior respondent at Post 1 felt that 108 rockets was enough[01]. Another respondent said that it would be nice to have more rockets to fire, or a sub-caliber device or other training rocket that cost less[03]. The respondent at Post 2 felt that live fire stresses people and equipment in a way that cannot be replicated in dry fire, and that the current allocation was not adequate to do firing-related tasks to standard[24]. The two DIVARTY respondents from Post 3 said that the current allocation was not sufficient if MLRS elements went to NTC[39, 41]. One said,

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"NTC and demos for visitors happen five or six times a year. 108 rounds is not enough because we resource NTC with 36 rounds for the platoon on rotation there. 108 rounds for the battery a year is not enough to attain proficiency."[41] Respondents at battery level felt that 108 rockets was enough.[44, 45] A respondent at platoon level said that the 108 rockets were broken into three 36-rocket packages: "This year we shot ROTC 36, then NTC 36, and then our field problems shot 36."[46] At Post 4, the senior respondent said that 108 was "comfortable" and that although he didn't "have the feel for it as the Battery Commander", he was not sure of the cost-effectiveness of more.[57] The respondents at battery felt that more were needed.[61, 62] One said, "We get 108 rockets per battery but it is not necessarily divided equally among the platoons and the sections."[62] At Post 5, one DIVARTY respondent said that the number was sufficient but maybe it could be reduced a bit.[79] The other said that the number was "a workable figure. Dog and pony shows come out of that but we try to hold the dog and pony shows to a minimum."[81] The battery respondent said, "We could do with more."[83] He also said that the live firings were not divided equally among platoons and sections because of turbulence. At section, one respondent said, "If you fire your 12 rockets in the first six months, the next crew may wait 18 months to fire any at all."[95] The other said, "With crew stability you could get by with three rounds per year if it was a highly competent crew."[94]

Table 14

Adequacy of Current Allocation of 108 Rockets per Battery per Year

|  | Post | | | | |
|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 |
| Battalion/ Divarty | Yes [01] No [03] | No [24] | No [39,41] | Yes [57] | Yes [79,81] |
| Battery |  |  | Yes [44,45] | No [61,62] | No [83] |
| Platoon | No [12] |  |  |  |  |
| Section |  |  |  |  | No [94,95] |

Ammunition and ranges for weapons qualification. There were reports at three posts of shortages in ammunition and ranges for individual and crew-served weapons qualification. At Post 1 the

respondent said, "My ammunition allocation is on an annual basis and does not account for turnover. I experience a 12% turnover every three months which translates into an ammunition shortfall. I deal with this shortfall by only qualifying during the day and familiarizing during the night. Qualification ranges for crew-served weapons are not available..."[01] A second respondent said, "(We have a) problem with small-arms ranges... We do not have a qualification course for crew-served weapons or the LAW. (Maneuver) units have priority on the M-16 ranges. We don't get the bullets (5.56mm) to meet... corps requirements for small arms qualification."[03] At Post 2, a turnover factor is built into the ammunition forecast.[22] However, there are shortages in 40mm grenades: "That means we can only qualify about 11 soldiers rather than the 50 authorized within the battalion armed with this weapon."[24] At Post 4, two respondents said that small arms ammunition was inadequate or not available[68, 72] and one said that ranges were not available[72].


Training aids, devices, and publications. All posts reported shortages and many-month delays in obtaining publications of all types, including technical manuals, CTT manuals and updates, Soldiers Manuals, and ARTEP/MTPs. No particular type of manual seemed in special short supply. The most commonly mentioned shortage in training aids was for emergency destruction (ED). Several posts said that they had fabricated their own ED kits. Some wished for easier access to training aids. Personnel from Post 2, which used force-on-force in their field training exercises, reported shortages of MILES equipment. One respondent said that very few training aids and simulators apply to the MLRS. Another said that the unit had constructed a small arms marksmanship trainer, based on an idea they had gotten from the Marine Corps, which had improved their marksmanship scores.[24]


Training Realism (Train as You Fight)

The MLRS puts extreme stresses on the principle that units should train as they will fight. In all posts and at all echelons this was recognized as a primary problem. The doctrinal deployment and employment for battalions, batteries, and platoons requires considerable dispersion, long range firing, heavy resupply demands, and major responsibilities for junior leaders down to the Section Chief level. Limitations in size and amount of training area at all posts prevented fully doctrinal deployment. It also produced overfamiliarization with the area available so that land navigation skills could not be practiced. These problems were compounded at some posts by what some respondents felt was a lack of understanding at higher echelons of the special problems and requirements of the MLRS. (See remarks under Commanders' experience, above.) Live fire was even

more affected than field training exercises, with many restrictions on firing locations and times that reduced live fire to what one respondent called "an admin drill"[39]. Other respondents complained that the special nature of MLRS led to the use of live fire in "dog and pony shows"[70, 71, 85] and demonstrations[84] which limited the training value of the live fire.

Post 2 was very innovative in overcoming many of these restrictions in both FTX and live fire exercises. Unlike other posts, in live fire the Section Chief was required to find a six-digit grid coordinate rather than a marked firing position, and safety and control procedures were embedded and did not appear to "intrude" on the Section Chief's tactical job.[21] In some field training exercises, MLRS platoons shared training areas with maneuver units. One respondent said that the MLRS can shoot-and-scoot after it fires so that the signature produced by the firing may not be a problem for the launcher "but we have certainly created one for someone else"[21] who is nearby. "The Platoon Leaders are the decision makers on how to lay out the platoon's operational area. They need to take other units into consideration when laying out their AO."[21] Another said, "The modern battlefield will be crowded and we think it is to our advantage to share that ground with as many units as possible. That gives our platoon leadership the opportunity to deal with land management issues."[24]

## Effective Use of Training Time

Most units reported that much of their field training time was spent in non-training activities, such as going to and returning from the training area and just sitting around and waiting for fire missions during the tactical play. Units complained also that time was often lost because of communications and SPLL malfunctions. Estimates of time actively engaged in what the respondents felt were meaningful training activities ranged between about 25% and 85%, averaging around 50%. Some Section Chiefs reported that they tried to use some of this dead time for individual training. Field training inevitably requires time to go to and come from the field, and inevitably all subordinate units cannot be actively engaged all the time. None the less, the amount of time actively engaged in training is an important qualifier for interpreting the training benefits of field time.

Some respondents felt that garrison training was not optimal. Respondents from Post 1, which emphasizes battle drill training, felt that it produced burnout and boredom from the monotony and that more flexibility was needed.[09, 14] While the same complaint was not heard from other posts, there was

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widespread agreement that most launcher tasks which could be practiced in garrison were not hard to train or learn. Many wanted more realism in their garrison training. Post 3 has much old equipment but usually maintains an operational readiness rating of over 90%.[39] However, it does little field training and one respondent complained that most tasks were trained in the motor pool because an FTX forces a crisis if the operational readiness rate falls below 90%.[56] Another said it was a sham unit[98].


## Empirical Data on How Well the Unit Performs


### Unit Performance Assessment Techniques in Use

Table 15 shows the techniques for assessment of unit performance capabilities and needs which were reported to be used by each echelon at each post. Post 1 used a quarterly observation of battery live fire and field training exercises by the battalion staff, which they felt gave them a good appreciation of the status and training needs of each battery. Post 2 showed a detailed and broad-based assessment program, including an external battery ARTEP. External battery ARTEPS were reported at Posts 4 and 5. At these posts, MLRS elements from other posts had conducted the evaluation. At Post 2, the batteries in the battalion had evaluated each other. Post 3 conducted no battery and only infrequent platoon field training. Comments at the three separate batteries on the lack of strong battery training guidance (see discussions under Training Management, above) strongly suggest that there was little battery-level on-going assessment of unit performance and needs, and the reported unfamiliarity with MLRS at DIVARTY (as discussed above) suggests that there was little on-going assessment from that level.

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Table 15

Unit Performance Assessment Techniques

| Echelons | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Bn/Divarty | SQT results, training assessments by battalion and battery commanders on LF and FTX once each quarter [1] | ARTEP, Fire mission time [24] CTT, SQT, PT, weapons qualification tion scores, last time in gas/chemical chamber in computerized data base, by individual and unit. [24,31]. Battalion Best-By-Test comparison[27,54] | NTC performance, battery ARTEP [41] (but no battery training is conducted at this post) | Informal assessment of proficiency from observation and feedback from the battery commander, ARTEPS, and Command Inspection Program [39] | Quarterly inspection/ observation, monitor SQT and ARTEP [81] |
| Battery | SQT, job books, observation of mission with FM 6-60 as guide. [5] Quarterly training certification SQT [15] CTT/SQT scores, kept by battery [11] | Fire mission time [26] CTT, SQT, weapons qualification, PT scores kept by training officer and 1st SGT [26,31] Best-by-Test [26] External and internal ARTEPS[26] | Commanders Evaluation Book with battle tasks for platoon [44] CTT, Divarty "pass" records, job books[45] | Safety certification, ARTEP, SQT[61] Ask the platoon leaders[62] | Training schedule shows weaknesses, PT and weapons firing scores, ARTEP evaluation packet [83] |

# Table 15 (cont)

| | Post | | | | |
|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** |
| Platoon | Track collective task performance in my mind, list of Lessons Learned [12] SQT, Best-by-Test, spot checks [30,34,16] | Job books, CTT, SQT, ARTEP [27,32] | Job books reviewed weekly [45] CTT [47], SQT, time firing missions, ARTEP [46] battle drills [56] | Conduct personal observations with platoon leader, SQT [63] Evaluation is very informal but I think we can tell [67] | Job books [84] SQT, CTT [85] ARTEP, live fires, SQT, observation [86] |
| Section | Job book, field expedient job book [12,8] | SQT, job books [28,34] | Job books [46,48] | Observation, job books are not kept [64] Observation, SQT [65] | Job books [86] |

## Proficiency Ratings by Unit Members

Because no unit records of collective task proficiency were available, respondents were given questionnaires on which they were asked to rate the proficiencies of their units on critical collective tasks. The scale categories for the ratings were: DEFINITELY GO; PROBABLY GO; 50-50 CHANCE OF GO; PROBABLY NO GO; DEFINITELY NO GO. The questionnaires on task proficiency varied from echelon to echelon, as different specific collective tasks are performed by each echelon. Two perspectives on unit task proficiency were sought: A self-rating by the senior leader at that echelon, and a rating by personnel at the next higher echelon. For example, battery performance was rated, task by task, by Battery Commanders and Operations Officers, as well as by the Commander or S-3 of the parent echelon; platoon performance was rated by the Platoon Leader and Platoon Sergeant, as well as the Battery Commander or Training Officer; etc. Proficiency data were summarized by assigning a score from 1 (DEFINITELY NO GO) to 5 (DEFINITELY GO) to the ratings on each task. The scores were then combined and averaged to give a composite proficiency score for each battery, platoon, and section in three task areas: Operations; Logistics; and Nuclear, Biological, and Chemical (NBC). The score in each area can range from 1 (DEFINITELY NO GO) to 5 (DEFINITELY GO). These composite ratings are presented in Tables 16, 17, and 18.

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Table 16 shows the composite ratings for each battery. Batteries A, B, and C were at Post 1; Batteries D, E, and F at Post 2; and Batteries G, H, and I at Posts 3, 4, and 5, respectively. The respondents were generally quite confident in their ability to perform the tasks successfully, with most ratings averaging between DEFINITELY GO and PROBABLY GO. There were no striking differences among batteries.

Table 16

**Battery Proficiency Ratings by Battery and Next-Higher Echelon**

|  |  | Batteries | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | A | B | C | D | E | F | G | H | I | MEAN |
| Battery | Self | 4.3 | 3.8 | 4.2 | 4.8 | 4.9 | 3.8 | 4.0 | 4.0 | 3.7 | 4.2 |
|  | Higher | 3.8 | 4.1 | 4.2 | 4.3 | 4.6 | 4.5 | — | 3.7 | 3.4 | 4.1 |
| Firing Platoon | Self | 4.4 | 4.5 | 4.5 | 4.3 | 4.5 | — | 4.1 | 4.6 | 4.2 | 4.4 |
|  | Higher | 4.0 | 4.3 | — | — | 4.9 | 3.4 | 3.8 | 4.1 | 4.0 | 4.1 |
| Firing Section | Self | 4.5 | 4.5 | 4.7 | 4.4 | 4.5 | 4.3 | 3.6 | 4.6 | 4.4 | 4.4 |
|  | Higher | 4.7 | 4.7 | 4.5 | 4.1 | 4.7 | — | 4.2 | 4.5 | 4.4 | 4.5 |
| Ammo Section | Self | 4.2 | 4.6 | 4.7 | 4.0 | 4.0 | — | — | 4.8 | 3.9 | 4.3 |
|  | Higher | 4.2 | 4.2 | 3.7 | 4.6 | 3.4 | — | — | 3.2 | 3.7 | 3.9 |

Table 17 shows the differences between batteries in battalions and separate batteries. Again, there were no striking differences among any of the ratings. The largest differences were the somewhat lower ratings of battery proficiency in the separate batteries, and the lower ratings of ammunition section proficiency by the next-higher echelon in separate batteries. In these cases, the ratings were between PROBABLY GO (rating of 4) and 50-50 CHANCE OF GO (rating of 3).

Table 18 shows the task proficiency ratings. The table shows a tendency for proficiency in NBC to be lower rated than the other areas. Again, there was a tendency for separate batteries to be rated lower than batteries in battalions These results show that, generally, units rated their proficiency as being good. The lack of major differences among posts is surprising in light of the major post differences in training, performance assessment, and unit conditions identified in previous analyses in this report. The overall high ratings are also surprising in light of the highly adverse training conditions previously identified in some units.

Table 17

Battery through Section Proficiency Ratings by Self and Next-Higher, Batteries in
Battalions versus Separate Batteries

|  |  | Batteries in Battalions | Separate Batteries |
|---|---|---|---|
| Battery | Self | 4.3 | 3.9 |
|  | Higher | 4.3 | 3.6 |
| Firing Platoon | Self | 4.4 | 4.3 |
|  | Higher | 4.2 | 4.0 |
| Firing Section | Self | 4.5 | 4.2 |
|  | Higher | 4.5 | 4.4 |
| Ammo Section | Self | 4.3 | 4.4 |
|  | Higher | 4.0 | 3.5 |

Table 18

Battery through Section Proficiency Ratings on Task Types by Self and Next-Higher,
Batteries in Battalions versus Separate Batteries

| Echelon | Type Tasks | Batteries in Battalions Source of Ratings | | Separate Batteries Source of Ratings | |
|---|---|---|---|---|---|
|  |  | Self | Higher | Self | Higher |
| Battery | Operations | 4.5 | 4.4 | 3.9 | 4.0 |
|  | Logistics | 4.5 | 4.3 | 4.1 | 3.8 |
|  | NBC | 3.8 | 4.0 | 3.4 | 2.9 |
| Firing Platoon | Operations | 4.4 | 4.2 | 4.4 | 4.0 |
|  | Logistics | 4.5 | 4.4 | 4.2 | 4.0 |
|  | NBC | 4.1 | 3.9 | 3.3 | 3.8 |
| Firing Section | Operations | 4.6 | 4.6 | 4.5 | 4.5 |
|  | Logistics | 4.7 | 4.5 | 4.6 | 4.4 |
|  | NBC | 4.2 | 4.2 | 4.0 | 4.1 |
| Ammunition Section | Operations | 4.4 | 4.2 | 4.3 | 3.7 |
|  | Logistics | 4.9 | 4.7 | 5.0 | 2.8 |
|  | NBC | 4.4 | 4.1 | 4.4 | 3.2 |

## Troop and Commander Satisfaction with TRADOC Products

### Recent School Graduates

Reports on the quality of the troops assigned to MLRS units were obtained from four of the five posts visited. All reports, from DIVARTY and battalion through section levels, were highly positive. A Battalion Commander reported that he felt that "the MLRS soldier is a cut above the average in the Army"[01]; a DIVARTY Commander reported that he thought "we get the quality soldiers (though we) get a 'bent round' once in a while, but that's normal anyplace"[57]; a Battery Commander reported that from the inprocessing interviews he conducted with his troops, he had observed that the great majority of the troops were enthusiastic, ambitious, and ready to accept responsibility[26]; and a Section Leader inferred from the quality of the troops he was getting that "the school is doing its job..."[93]

At every post, the soldiers and leaders reported that these newly assigned school graduates are assigned first to the ammunition platoon[15,34,56,73,94,95], from which they progress either directly to a launcher section, or through a reconnaissance or maintenance assignment to a launcher section[08]. A Section Chief reported that "The school provides basic training, but we have to polish (it up) with hands-on (training)", noting further that "they need a lot of hands-on practice in each area"[68]. Table 19 shows that the most commonly reported requirements when new graduates reach their first assignments are driver's training and experience with the equipment they will be operating and servicing.

### Training Materials and Publications

At the time of the survey, personnel from all posts reported shortages or difficulties in obtaining training publications[30,38,56], including ARTEP-MTPs[3,14,41,48], Field Manuals[5], Soldiers Manuals[5,16,45,47], Common Task Manuals[34,96], Training Circular 6-60s[45,46,53,63], and Job Books[68,94]. The fact that other individuals at two of the posts reported that "pubs are not a problem"[51,61,71] suggest that local fixes may significantly ease the situation.

Reports from individuals on the utility of the training materials, including the ARTEP and TC 6-60, suggest that though both documents are used and both are highly regarded as training guidance[24,44,63], the ARTEP is considered limited in scope[3,92] and TC 6-60 is a candidate for rewrite[63] to make it less "school-bookish" and to base it more on the experience of commanders in the field.

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**Table 19**

**Areas Where New School Graduates Most Need Work on Assignment**

| | Post | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Unit- or Job- Specific Skills | X[7] | | | X[78] | X[91,93] |
|    Driving | X[16] | | | X[78] | X[90] |
|    Vehicles<br>    ● Launcher<br>    ● HEMTT | X[7,10,15] | X[34] | X[50,53,55] | X[62,73] | X[89] |
|    All Areas | | | | X[66,68,76,77] | |
| Driver's License | X[19,20] | X[38] | | | |
| Maintenance (PMCS) | X[7] | | | X[65,70,72,74] | X[79,87,90] |
| Driver's Training | X[16,19] | X[30,34,37,38] | X[44,45,51,54,55,56] | X[61,65,74] | X[86,87,90,97,98] |
| Map Reading, Land Nav | | | X[45] | X[65] | |
| Crane Operating | | | | X[61,65] | |

## Training Devices

Discussions on training devices with commanders and troops alike stressed the advantages of increased capabilities[01], cost-effectiveness[92], and conservation of operational equipment[08,61] to be realized through the use of simulators and simulations. With varying degrees of specificity, commanders and troops reported and defended needs for

> a system to operate independently of TACFIRE through the FDS to generate targets for fire missions in volume corresponding to sustained, surge, and peak rates[01,03,59]

> a simulator similar to SIMNET, which would provide training on movement, firing, coordination, and maneuver skills without the high maintenance requirement associated with field exercises[08]

> a fire control panel simulator[18,63]

> a simulator for TACFIRE training; part-task trainers[61]

> a Battery computer training system[62]

> a SPLL with programmed faults[92]

In the area of training aids and devices, commanders and troops were generally satisfied with the varieties of training aids and devices available, though they were less satisfied with the local requirements for obtaining the materials for training. Nonetheless, they were able to generate several recommendations for training-aid development, including

> an improved practice rocket that
> > has the same weight as the service rocket[01]
> > exercises, but does not stress, the system[01]
> > permits assessment of terminal effects[01,03]
> > includes an impact predict system[01]
> > has a smaller surface safety zone[01] and
> > is cheaper than the current practice rocket[03]

> a training pod with which soldiers can simulate loading a loaded pod[08]

> sand tables[63]

> video tapes on, e.g., commo equipment to replace the unsatisfactory TEC tapes that are presently available[74]

Through ingenuity and initiative, soldiers in the field have designed or adapted and produced prototype training materials and training aids locally that may be worthy of procurement and distribution Army-wide. At one post, soldiers have constructed a "whiz wheel", a safety device that displays azimuth and quadrant for live firing, and a small arms marksmanship trainer, to which they attribute their #1 ranking in Corps Artillery competition[24]. At another, troops report having improvised ammunition destruct dummies when they were unable to obtain an ED kit in a timely manner through supply[61].

Personnel from all the posts reported having put together performance tests, either to meet a specialized need such as certification or qualification prior to firing[01,14,15,61,68,83], to diagnose specific performance weaknesses[83], or to enhance or take the place of the then unavailable ARTEP-MTP[16,27,30,31,44,97]. A collection of these tests, based both on doctrinal materials and on experience, might prove a valuable workbook for ARTEP developers or for wider dissemination.

## Additional MLRS Training Needs

Leaders and soldiers at all echelons agreed that there was a need for more training in the MLRS community. For enlisted personnel, whose trainers have no time for the training of tasks other than those directly supporting the METL[3], alternatives include correspondence courses[19]. For the SFC MOS-reclassified

soldier who is transferred (e.g. from the Pershing) directly to a SPLL as a Chief, the requirement appears to be for improvements in the MLRS Cadre Course[93]. A Section Leader[55] and a DIVARTY S3[79] agreed that "The DIVARTY people need help to better understand the MLRS". The DIVARTY Commander and the S3 agreed that it would help to fold more hands-on training into an expanded cadre course at the school[79,81].


## Tips for Trainers and Training Managers

### Tips on Training and Evaluation from Post Number 2

Of the units visited, the one at Post Number 2 had the most extensive training and evaluation program. The unit

> had prepared a training day cost model which it used to prepare and defend the training budget[22];
>
> had a strong training philosophy which emphasized the responsibilities of junior leaders, to prepare them for the responsibilities they will assume in wartime; and
>
> incorporated this philosophy both in SOPs and in how they conducted training.

For example,

> each Section Chief was responsible for
>
>> all training of his men, including rifle marksmanship, land navigation, and first aid, as well as 13M MLRS crew skills[21, 24]
>>
>> the dispatch of his vehicle (without a technical inspection team) [21]
>>
>> post support functions[24]
>>
>> conducting live fire, given only a six-digit coordinate which he had to locate on the ground, and safety procedures that were unintrusive[21]
>
> during FTXs, each Platoon Leader was responsible for
>
>> participating actively in joint land management with maneuver unit commanders and
>>
>> obtaining battlefield information from maneuver units[21]

In addition to its actions to strengthen junior leadership, the battalion provided considerable guidance and support to the individual batteries (see Table 1).

The unit trained in the field extensively[24], training with other field artillery elements as well as with other types of units[21]. Training realism was high in live fire[21, 22] and in FTX, including joint use of land with maneuver units[21, 24], and use of MILES[24, 28, 32]. The unit used ARTEP-MTPs and other publications to plan and evaluate training[24, 26, 31, 27] and conducted external and internal evaluations using home station and off-post evaluators and at least some measurable standards[24, 26, 31, 27]. Finally, the battalion strongly endorsed annual participation in rotations at the NTC[21, 24].

To complement and to strengthen the skills obtained in field training, the unit at Post 2 participates in corps-level CPXs which include MLRS logistical support requirements[21, 24], and conducts institutionalized Train-the-Trainer programs[26]. (See also Tables 1-5.)

Fundamentally, this battalion followed the training doctrine contained in FM 25-100 and showed considerable ingenuity in translating the doctrinal principles into a training program. The specifics provide excellent suggestions for trainers and training managers. Some of the training, training evaluation, and training management methods should be usable at other locations. However, it is important to note that this unit is a battalion, and may have resources and conditions which are not present elsewhere. As important, it also has a battalion staff which is very knowledgeable about the MLRS. This staff permits the battalion to give the batteries the considerable support and supervision needed for effective training. In the separate batteries, the same functions are the responsibility of the DIVARTY which, by self-report and reports from the batteries, do not have the same level of MLRS expertise as do the battalion staff at Post Number 2.


Other Tips

Relatively few tips for improving training emerged from the other posts. The following were extracted from interviews at all six posts visited:

> Post Number 1 strongly emphasized battle drill training, having developed its own drills which were used weekly during Sergeant's Time. While standardized drills are an efficient and effective technique for routine training and internal evaluation, three Section Chiefs reported that they can get to be monotonous for the troops and produce "burn out"[9, 12, 14].

Post Number 2 reported success with Best-by-Test competitions, which the troops liked and which were a valuable tool for internal evaluation of crew performance.

Two separate batteries had integrated their firing and ammunition platoons. Respondents reported that this procedure facilitated cross-training[75, 61, 44].

A Section Chief at Post Number 5 spoke for many of his fellows when he emphasized the importance of hands-on training for newly assigned soldiers. "We walk them through (Skill Level) 10 and 20, which is pitched to a 6th grade level...Then its hands on with the Chief supervising. Its easier to run through the tasks than it is to read about it. OJT hands-on is best."[85] A Chief at Post Number 4 made a similar analysis, adding that he then would put the new soldier with a knowledgeable older soldier[65].

A Section Chief at Post Number 3 emphasized a progressive training approach to driver training that "starts with a standard driver training class that introduces him to the basics, then moves on to a small strip 200 yards wide that allows him to practice the basic stuff, then moves out on the post."[51]

The unit at Post 2 was setting up a local learning resource center to cope with the (widely reported) shortages of manuals and training devices[30]. And finally, at

Post 3, the Battery Commander had instituted a 13P SQT concentrated training program which included taking many practice tests, to which he credited the fact that his unit's 13Ps' SQT scores were 20% higher than average[44].

## Most Difficult Tasks to Train

The tasks most commonly mentioned as difficult to train were NBC, especially decontamination, and Emergency Destruction. However, a large number of soldiers reported that none of the operational tasks were particularly difficult: "Nothing is really that hard. Just run through it."[85] "Maybe reloading, but there are no hard tasks really."[72] "NBC. MLRS tasks are easy if you train on them, but the MOPP gear is not popular. Nobody likes to train with it. In Germany we did it and it could be done here."[65]. Rather, they said that the problem in training was getting the time, equipment, land, and support necessary (e.g., a "hasty decon truck", ED kits). Representative comments were: "Training isn't hard. The problem is losing

troops to details, PCS, etc."(30) "Just getting the time to train is the hardest part. There is nothing really hard about training for MLRS."(70) "MOPP gear exchange. It takes a long time but it isn't really hard. Nothing is really hard to learn but it still requires sustainment."(90) "Just going step by step when you don't have a SPLL--trying to cover all the tasks. That's really the hardest part."(49) "Fire mission processing-- When the launcher is down you can't train."(55)

## Program Validation:
### Adherence to Training Doctrine

The summary of results that follows is organized around the Training Management Cycle from FM 25-100, Training the Force. In the pages to follow, the steps in the planning, execution, and assessment of training, as found in FM 25-100, are presented as bullets at the top of each page. Relevant bullets are footnoted and findings related to that bullet are presented below on the same page.

The fact that the findings are keyed to where the system isn't working should not take away from the efforts of the soldiers and leaders who are applying their considerable skills and ingenuities to their attempts to achieve a high state of training under often very trying circumstances. The fact that a disproportionate number of the findings concern separate batteries reflects only that theirs is the more difficult circumstance.

## PREPARE LONG-RANGE PLAN

Prepared at MACOM, Corps level; extends at least one year

Disseminate METL and Battle Tasks

Establish training objective for each mission essential task

Schedule projected major training events[1]

Allocate long-lead-time resources, e.g., major training area rotations[2]

Coordinate dates with support agencies; eliminate training detractors[3]

Publish long-range guidance and planning calendar

Provide basis for command operating budget input[4]

Provide long-range training input to higher headquarters

---

1. MLRS separate batteries interviewed did not participate in major training events.

2. MLRS separate batteries interviewed did not participate in major training area rotations.

3. Findings suggest need for more realistic anticipation of requirements for MLRS system maintenance and MLRS personnel fill.

4. Funding for MLRS system maintenance for training appears to be based on an underestimation of actual requirements.

GENERAL:

Emphasis during this phase of the training cycle is upon large-scale externally supported events that MLRS batteries do not participate in.

Two of the greatest MLRS unit training detractors, system reliability (system maintenance) and personnel fill need to be addressed early in planning, e.g. in command budget input, as training detractors.

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## PREPARE LONG-RANGE PLAN

### Highlights

**Command Training Guidance (CTG).** Published at division and brigade levels; addresses

>       Commander's Training Philosophy
>       METL and associated battle tasks
>       Major training events and exercises
>       Training approaches to, e.g.,
>               individual training
>               leader training
>               mandatory training
>               new equipment training
>       Standardization
>       Training management
>       Resource allocation

**Long-Range Planning Calendar.** Published at division through battalion

**Time Management**, e.g. Red-Green-Amber System[1]

---

1. In Green-Amber-Red time management system, organizations in

>       Green periods conduct planned training without
>       distraction and external taskings

>       Red periods execute details and other administrative
>       requirements, including maximizing soldiers'
>       opportunities for leave and granting block leave

>       Amber periods are assigned support taskings beyond the
>       capabilities of the units in the Red cycle

An MLRS separate battery characterized its status as "Forever Amber"; each separate battery interviewed reported that regardless of its period in the cycle, maneuver elements always have priority in access to ranges and training areas.

**Highlights** (Cont'd)


   **Training Events**, in which the senior commander is able to
   bring together, at one time, the training areas and
   facilities, opposing forces, controllers, evaluators, and
   other resources that create the most realistic and battle-
   focused training...and in which senior commanders can
   exercise and integrate all battlefield operating systems
   within their wartime organizations...[1]  Training events
   include

|         |                      |
|---------|----------------------|
| JTX     | CTC (NTC, JRTC, CMTC)|
| CTX     | TEWT                 |
| FTX     | CPX                  |
| CALFEX  | STX                  |
| LFX     | MAPEX                |
| FCX     | LOGEX                |
| CFX     |                      |

---

1.  With regard to training events

     MLRS separate batteries do not participate in major
     training events such as JTX, CTX, CTC, or DEPEX.

     Though MLRS separate batteries may participate in local
     training events, such as FTX, LFX, CALFEX, FCX, TEWT,
     CFX, CPX, STX, MAPEX, LOGEX, they normally do not
     participate in field exercises with maneuver elements
     locally.

     MLRS units do not routinely go to NTC or JRTC.

     MLRS separate batteries do not participate in REFORGER
     and similar externally supported events.

     MLRS separate battery participation in LFX/CALFEX is
     frequently tied to demonstrations for visiting
     dignitaries, ROTC classes, etc.

     MLRS CPX representation was reported to be unrealistic
     with respect to number of rockets fired, system
     reliability, and logistics (ammunition resupply)
     capabilities.

## PREPARE LONG-RANGE PLAN

**Highlights** (Cont'd)


**Training Resources**, as found in

Command Operating Budget
Ammunition Authorizations[1]
Fuel Allocations[2]
Local directives: Training areas & facilities[3]

---

1.  With regard to ammunition

Units report that small arms ammunition is not
available for qualification with individual weapons; that
"familiarization" requirements have replaced
qualification requirements on those weapons for which
ammunition is not available.

Units report that ammunition is not available for
qualification with assigned weapons (e.g. 40-mm grenade
launcher);

Assigning 108 rockets per year per battery cannot
presently be defended on the basis of its establishing
and maintaining Gunner proficiency in firing sections.

2.  Present fuel allocations suffice for the amount of field
training that goes on.  However, if firing sections and
ammunition sections were to deploy with integral units'
performing tactically realistic tasks over realistic distances,
present fuel allocations would quickly be exhausted.

3.  Local directives on training areas and facilities are
reported to severely constrain MLRS training in the name of

organizational priorities, where maneuver units have
priority in training areas and facilities, and where the
MLRS separate battery, along with other "separate" units,
may be assigned a support role unrelated to its combat
mission in training up the maneuver unit for upcoming
externally supported training, or

safety, where MLRS units must fire from surveyed firing
points, using "shadow" SPLLs, in one instance from 1900
hrs to 0600 hrs on weekends, or

readiness, where MLRS units are forbidden to operate,
much less maneuver with, the system because to do so
would hazard malfunction or breakdown, resulting in loss
of "operational readiness"

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## PREPARE SHORT-RANGE PLAN

> Prepared at division through battalion levels; extends three months; provides common basis for preparing near-term training plans

Refine and expand upon portions of long-range plan[1]

Cross-reference training events with training objectives[2]

Allocate short-lead-time resources, e.g. local training facilities[3]

Coordinate short-range calendar with all support agencies[4]

Publish short-range guidance and planning calendar

Provide input to unit training meetings[5]

---

1.  No specific reference is made to MLRS in DIVARTY's Short-Range Plan.

2.  DIVARTY Short-Range Plan provides no MLRS training objectives.

3.  DIVARTY Plan does allocate ranges and training areas, though considerations such as organizational priorities, safety, and readiness may affect realization of these plans.

4.  MLRS separate battery is not called out specifically in the DIVARTY Short-Range calendar and thus no extraordinary training support (especially maintenance support required for SPLLs that may be up to 8 years old) may be programmed for these maintenance-intensive weapon systems.

5. Only input from DIVARTY to separate battery weekly training meetings is reported to be in range and training area scheduling.


GENERAL:

It is reported that DIVARTY does not provide training guidance to MLRS separate battery outside of assigning ranges and training areas.  (MLRS separate battery has its own METL and is expected to develop its own training program).

## PREPARE SHORT-RANGE PLAN

## Highlights

**Short-Range Training Guidance.** Published sequentially at division through battalion levels with reference to CTG; comes out quarterly (QTG); addresses

> Commander's assessment of METL proficiency[1]
> Training priorities[2]
> Combined arms and services training[3]
> Cross-reference training events and training objectives[4]
> Individual training[4]
> Leader development[4]
> Preparation of trainers and evaluators[4]
> Training evaluation and feedback[4]
> Force integration[4]
> Resource guidance[5]
> Training management[6]

---

1. It is reported that DIVARTY commander and staff may have little experience with or knowledge of MLRS system, doctrine of employment, or training requirements.

2. Training priorities for maneuver units and for tube artillery derive primarily from external events, which separate batteries do not participate in.

3. Separate batteries do not participate in combined arms and services training.

4. MLRS separate battery METLs and their associated training objectives do not correspond to those of tube artillery, nor are the training events the same. Furthermore, conditions in the unit (including personnel fill, turnover, equipment reliability), the character of MLRS tasks and standards, and the weapon's unique capabilities as a force multiplier, severely limit the relevance of QTG to the MLRS separate battery.

5. Resource guidance is reported to take the form of resource allotment; i.e., of notification of resource availabilities.

6. Responsibility for training management, from METL development through identification of associated tasks, formulation of training objectives (tasks, conditions, and standards), design of training programs and their execution, including, in the absence of an ARTEP-MTP, the development of T&EOs for evaluation and feedback, has fallen to the separate batteries.

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## PREPARE SHORT-RANGE PLAN

**Highlights** (Cont'd)


**Short-Range Planning Calendar**: Sequential development provides time lines necessary for small-unit leaders to prepare near-term training schedules; details are added to further define major training events from the long-range calendar including

Principal daily activities of major training events
LTA/garrison actions to prepare for major training events
Mandatory training, e.g. APFT, weapons qualification
Non-training events, e.g. holidays, installation support

**Training Events** identified and scheduled during Long-Range planning are refined in terms of mission scenarios, collective and individual training objectives, resources, and coordinating instructions[1]

**Multi-Echelon Training** allows simultaneous training and evaluation on individual and collective tasks at more than one echelon; is the most efficient and effective way within limited periods of training time[2]

**Training Resources**: Division and brigade commanders coordinate with resource processes that support training to check and verify resource availabilities; allocate training resources to subordinate organizations for specific training activities[3]

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1.  Emphasis during short-range planning at battalion/DIVARTY level is on adding meat to the skeleton long-range plan.  As separate batteries do not participate in major training events, they do not benefit from DIVARTY's short-range planning other than their getting a heads-up on upcoming mandatory training, holidays, and likely maneuver-, movement-, or range-support details.

2.  Nearly all MLRS training at platoon and battery is multi-echelon training.  The problem is not one of having multi-echelon training or single-echelon training; the problem is one of having training or not having training.

3.  Separate batteries, with no specific roles to play in the major training events on the short-range calendar, do not stand to benefit from this check of resource availability and reallocation of resources based on training events.

## PREPARE SHORT-RANGE PLAN

## Highlights (Cont'd)


**Short-Range Training Briefings** (QTB - Quarterly Training
Briefings)  Brigade and battalion commanders brief the
division commander on

>Review of last quarter's accomplishments and shortfalls
>Organization's METL and assessment of proficiency levels
>Unit's training focus and objectives for upcoming quarter
>Organization's short-range planning calendar
>Description of upcoming training events
>Leader development program
>Training the trainers and evaluators
>Force integration plans
>Resource allocation

CSM normally follows his commander's presentation with

>Review of last quarter's individual training feedback
>Assessment of current individual training proficiency
>Individual training focus for upcoming quarter
>Integrating METL and associated individual task training
>Marksmanship and physical fitness programs
>Education program
>NCO leader development program

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No information was obtained on Short-Range Training Briefings

## PREPARE NEAR-TERM PLAN

Near-term planning is conducted at battalion and battery level training meetings, covering a six-to-eight-week period prior to conduct of training; leads to publication of training schedule

Determine best sequence to train METL and associated tasks[1]

Schedule and execute training objectives in short-range plan[2]

Make final coordinations for resources[3]

Provide specific guidance, including training aids, to trainers[4]

Make final coordination with other units as required[5]

Prepare detailed training schedules

---

1. Beyond a recognition of clear prerequisite relationships of certain training blocks, there were no reports of the systematic sequencing of task training (as in "training roadmaps").

2. Lacking an MLRS-tailored short-range plan, the separate battery develops its own training objectives as well as the schedule to train to these objectives.

3. While tube-artillery units appear to have the opportunity to "make final coordination for the allocation of resources for training" (Ref FM 25-100), MLRS separate batteries are reported simply to have to make do with published assignments. Even so, where the MLRS, by virtue of its mission, competes with maneuver units for access to training areas, MLRS enjoys a lower priority.

4. In at least one separate battery, the soldiers reported that "we are all trainers", that responsibility for initial training rested with the leaders from Platoon Leaders through Section Chiefs. Indeed, in initial training, cross-training, and sustainment training, individuals at all levels took on the job of training each other. In no case was there evidence of a formal program for sharpening the soldiers' skills as trainers; indeed, in at least one unit a soldier noted that they needed such a program to train the trainers. Such guidance as was available to trainers was evident in the form of advice from peers and leaders and published materials.

5. Not Applicable for MLRS separate batteries.

## PREPARE NEAR-TERM PLAN

### Highlights

**Training Meetings**, conducted by platoons, batteries, and battalions, to refine and expand upon the short-range plan, and to create a bottom-up flow of information regarding specific training proficiency needs of the small-unit and individual soldier. At battalion level, training meetings primarily cover training management issues; at company and platoon level, they are directly concerned with the specifics of conducting training.[1]

**Training Schedule**, specifying who, when, where, what, how long, uniform, weapons, equipment, references, and safety, locks in training when it is published. Senior commanders establish policies to minimize changes to the training schedule, provide feedback to subordinates on training schedule quality, and subsequently attend as much training as possible to ensure that mission essential tasks are accomplished to standard.[2]

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1. Separate batteries reported holding training meetings weekly with the Battery Commander, Operations Officer, Training Officer, First Sergeant, Platoon Leaders, and Platoon Sergeants in attendance to identify training objectives from METL, ARTEP-MTP, TC 6-60, -10 manuals, and locally developed drills, as well as from input on training needs from sections, and to develop training schedules to meet these objectives. In addition to these training management issues, the battery leadership provides guidance to trainers, discusses bases for executing and evaluating training (including the application of training techniques and standards), and attends to the specifics of conducting training.

2. Separate batteries reported that last-minute changes to training schedules are a significant training detractor and that taskings from DIVARTY frequently introduce last-minute changes in the schedule.

## EXECUTE TRAINING

> Executed (in MLRS separate batteries) at battery,
> platoon, section, or individual level; decentralized;
> multi- echelon above individual level

Adequate preparation

Effective presentation and practice

Thorough evaluation

---

Information on training execution follows (See Highlights)

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## EXECUTE TRAINING

### Highlights

**Preparation** of
Individuals to be trained[1]
Trainers[2]
Training Support, including
vehicles[3]
ammunition[4]
training areas
policies and restrictions
personnel scheduling

---

1.  In the absence of "training roadmaps" to guide the training, separate batteries reported that preparation of trainees for the field was not a problem; though they cited having trained and licensed drivers as critical.  In general, soldiers reported that tasks in both the firing and ammunition sections were easy to learn and to perform.  More important was making sure that the soldiers were available for training by tightly managing the assignment of detail troops to preserve section and platoon integrity among the soldiers remaining.

2.  See note 4, page 44.

3.  Availabilities of SPLLs and HEMTTs for training were limited by their use in displays and demonstrations, by breakdown, or by restrictions on their use in order to prevent breakdown and loss of operational readiness.  At some posts, the age of the equipment was cited to account for low reliability and very high breakdown rates.  Other reasons offered for equipment failure were insufficient driver training in AIT and improper maintenance.  Some spare parts are reportedly in short supply.

4. Allocations of rockets (108 per battery per year) for live fire is reported by many to be sufficient, despite the fact that a portion of those 108 are expended during demonstrations for ROTC and visiting dignitaries.  Though some soldiers and some leaders reported that they needed more, personnel turnover rates as high as 10% to 14% per month, along with equipment breakdown rates which limit the number of sections able to fire at any given LFX, make it most difficult to justify a rise in the current allocation of rockets on the basis of its cost effectiveness in initial or sustainment training of gunners and crews.

Ammunition allocations to MLRS units were reported to be insufficient to qualify personnel on their assigned weapons, resulting in one commander's having established "familiarization" requirements for the weapons instead of the unattainable "qualification" requirements.

**EXECUTE TRAINING**

**Highlights** (Cont'd)

    **Preparation** of

        Individuals to be trained
        Trainers
        Training Support, including
                vehicles
                ammunition
                training areas[5]
                policies and restrictions[6]
                personnel scheduling[7]

---

5.  Training areas were mentioned as a problem at every installation visited.  Common problems reported were insufficient area to deploy tactically, competition for training areas with maneuver elements (which typically had priority), limited numbers of suitable areas with the result that soldiers quickly learned the lay of the land, limited number of firing positions (for live rocket fire), and limited and heavily used ranges for qualification and familiarization on assigned weapons.

6.  Policies and restrictions reported to interfere with training ranged from local restrictions on overhead live fire, which at one post, coupled with extremely limited training and range areas, restricted MLRS live fire to nighttime hours on weekends; to environmental protection restrictions which limited both the areas available and the degree of tactical realism that could be played on maneuvers; to organizational restrictions on the start-up and maneuver of the equipment.

7.  Personnel scheduling was reported to be even more important for getting training done in the light of personnel shortfalls so severe that one ammunition platoon reported that it was able to send only six of it 18 HEMTTs out to the field at one time for training, in the light of turnover rates of 10% to 14% per month, and in the light of heavy external tasking (details).  At least one separate battery reported that last-minute taskings, and loss of personnel for training was a significant training detractor.

**EXECUTE TRAINING**

**Highlights** (Cont'd)

    **Presentation and Practice**

        Inform trainees of training objectives and evaluation methods[1]

        Follow presentation with practice[2]

        Initial training under basic conditions, sustainment training in greater detail, with combat-like stresses[3]

---

1.  Training objectives are stated in terms of tasks, conditions, and standards in the ARTEP-MTP.  At the time of this survey, most of the units visited had not had access to the ARTEP or had not been using it, and the locally developed materials they had been using were not organized in the typical T&EO format.

2.  Characteristically, presentation **is** through practice.  There was reported a heavy emphasis upon hands-on training, with the firing and ammunition Section Chiefs as trainers in a one-on-one or one-on-two training situation.

3.  High turnover, infrequent training opportunities, and unavailabilities of personnel for training **mean that sustainment** training in greater detail and under conditions that approach wartime stresses is rare.  Reportedly, training is much more likely to be initial training for at least one trainee (of two in the section) each time it is delivered.

## EXECUTE TRAINING

**Highlights** (Cont'd)

**Training should be:**

**Accurate:** Follow current doctrine, technically correct[1]

**Well-Structured:** Mix initial and sustainment training; integrate soldier and leader tasks with METL tasks; schedule for concurrent individual and collective training[2]

**Efficient:** Spend resources properly; make full use of time; use devices, simulators, simulations[3]

**Realistic:** Train as you will fight or support: U.S. versus OPFOR doctrine; combined arms and joint task organization; TADSS for realism

**Safe:** Integrate safety requirements

**Effective:** Employ competition to achieve prescribed standard in order to build proficiency, teamwork, confidence, and cohesion

---

1. Lacking ARTEPs, units have developed drills, handbooks, etc., from TC 6-60, TMs, and other sources. These materials are accurate but do not consistently provide collective training objectives and individual and leader tasks that support them; resource requirements; and evaluation standards as the MTPs do.

2. Training in separate batteries is largely unstructured, at least partly because these units are faced with constantly changing training needs as a result of high turnover, with infrequent training opportunities, and with uncertain availabilities of personnel for training. Unavailable to the Separate Battery Commander is guidance of a senior leader who might "personally observe and evaluate the execution of training at all echelons and from his observations and other feedback provide guidance and direct changes...", to say nothing of "... assigning coordination of training support for (MLRS) units as a priority requirement for (his) staff". (Reference: FM 25-100, page 4-1)

3. There are no FCS simulators at home station. Thus training must take place in the SPLL and the great majority of the time spent in field training is spent in fire mission processing, to the exclusion of training in other warfighting skills that can be trained only in the field environment. Considering the time that the system spends deadlined and unable to go to the field, this is not an efficient use of it when it does make it out there.

## EXECUTE TRAINING

**Highlights** (Cont'd)

**Training should be:**

**Accurate:** Follow current doctrine, technically correct

**Well-Structured:** Mix initial and sustainment training; integrate soldier and leader tasks with METL tasks; schedule for concurrent individual and collective training

**Efficient:** Spend resources properly; make full use of time; use devices, simulators, simulations

**Realistic:** Train as you will fight or support: U.S. versus OPFOR doctrine; combined arms and joint task organization; TADSS for realism[4]

**Safe:** Integrate safety requirements[5]

**Effective:** Employ competition to achieve prescribed standard in order to build proficiency, teamwork, confidence, and cohesion[6]

---

4. MLRS separate batteries reportedly do not train in the field with maneuver units, do not take part in major training events such as combined arms or joint training exercises, do not maneuver in force-on-force exercises even at home station, and do not employ MILES individual or vehicle equipment in their training. It was reported that in a CPX where MLRS was played, the MLRS was not played intelligently or realistically.

5. Certain restrictions, e.g. on overhead fire and on the use of shadow SPLLs for live fire, have been removed at some posts but not at others. Reported "uneasiness" with the safety aspects of the system appears to have engendered a conservatism that some see as a constraint on aggressive training.

6. To the interviewer, SPLL crews exhibit teamwork and cohesion. Though their warfighting skills be unverified, they appear confident that they can do what they will be called on to do. Many of the section members express little confidence in the equipment. "Prescribed standards", in the sense of objective standards, do not exist, outside of times for some of the FCS functions. Many important field tasks are performed seldom and "standards" depend, for the most part, on the judgment of the trainer/evaluator.

# EVALUATE TRAINING

Evaluations measure the demonstrated ability of individuals, leaders, and units against specified training standards[1]

    Informal:  Leader visits training versus

    Formal:  Dedicated evaluators
            Appear on long-range and short-range plans[2]

    Internal:  By organization being evaluated versus

    External:  Planned, resourced, conducted by one echelon higher

    Reports prepared

---

1.   Reports indicate that in the absence of ARTEP-MTP guidance at the time of this study, internal evaluations of both individual and collective task performance are characterized by "observation" of performance with reference to "generally understood and accepted" but rarely specified training standards. In MLRS battalions, this situation is changing with the local development of Platoon Leader Handbooks, Drills, and other training materials.

2.   In the case of separate batteries, there is no local agency to perform a formal evaluation, with the result that formal evaluations are few and far between, requiring as they do, complex coordinations to arrange for dedicated evaluators to be present, usually on TDY from one of the MLRS battalions.

## EVALUATE TRAINING

## Highlights

### After-Action Review[1]

Establish what happened

Determine what was right, what was wrong

Determine how to do it right

Perform the task again

### Evaluators[2] must:

Be familiar with evaluated unit's METL

Be tactically and technically proficient in the evaluated tasks

Know the evaluation standards

Follow the evaluated unit's tactical and field SOPs

Consider factors possibly affecting evaluated unit's performance

---

1. Reports indicate that firing sections practice separately when they get to the field. Input (fire missions) comes from higher and they respond interactively with the fire control system. Training and evaluation of this task seems only superficially to fit the AAR approach.

2. While another separate battery might be expected to meet the criteria above for evaluators, units reported that they relied upon MLRS battalions to provide external evaluators.

## DISCUSSION

Unit members generally expressed strong confidence in the proficiency of their units, as would be expected of soldiers and leaders who have pride in themselves and their units. However, particularly in the separate batteries, at the time of this survey, evaluations of collective performance had largely been informal. Some reported that they had little feedback after training exercises and that they had no one external to the unit to evaluate them. Also, training realism was often poor, and many tasks that are important for true operational use of the MLRS (e.g., coordination and logistical support of dispersed platoons and firing units using shoot-and-scoot tactics over realistically long distances, land navigation on unfamiliar terrain, joint terrain use and coordination with other types of units, full NBC including decontamination) were generally not practiced at all. These conditions are not the best for forming an accurate judgment of collective, unit proficiency.

The reports in the separate batteries strongly suggest that training management had, in effect, been decentralized down to the platoon level (see Training Management, above). This may have been due to the relative unfamiliarity of battery commanders with the MLRS. One DIVARTY respondent commented on the need for lead time, when selecting battery commanders, to allow them to receive MLRS training before they assume command. He said also that just now he was beginning to get Captains who had experience with the MLRS as Lieutenants. A related problem is the reported unfamiliarity with MLRS at DIVARTY. This unfamiliarity was reported by DIVARTY at each of the three separate batteries and confirmed by reports at lower echelons. The lack of familiarity almost certainly limits the amount of training guidance and supervision that can be provided. It probably also limits DIVARTY capabilities to fully exploit MLRS capabilities in operational use.

These findings support the following recommendations:

1.  To enhance the capabilities of Officers and NCOs to exploit the MLRS's potential as a force multiplier in their planning and operations,

    expand MLRS portions of Service School and Training Center courses for Officers and NCOs to include greater emphases on tactical employment, maintenance, and training, and

    develop Officer and NCO MLRS short courses to be delivered at local installations by a NETT to cover MLRS materials from Service School or Training Center courses for currently assigned artillerymen.

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2. Because the MLRS separate battery has no higher MLRS organization from which to receive guidance and support, and because of the relative inexperience with MLRS at battery and DIVARTY levels, develop a USAFAS-recommended training and evaluation program for use by separate batteries that includes

   progressive multi-echelon training plans, including a short course on training-the-trainer;

   training objectives, including tasks, conditions, and standards, that will provide objective bases for internal evaluations so that trainers will not be required to make sophisticated judgments which would require more extensive experience than they have to evaluate their own units; and

   materials, including drills, for executing, evaluating, recording and using the results of training at section through battery levels.

   Materials should provide for

   both initial training and sustainment training

   training scheduling based upon

   actual conditions of turbulence and turnover in the unit, and
   amount of simple forgetting over time

   Units reported that over-familiarity with their training areas reduced the value of their training. Given the importance of land navigation and terrain appreciation to MLRS tactical employment, this finding supports the following recommendation.

3. To provide an opportunity to develop terrain-appreciation, tactical-planning, and map-reading skills on unfamiliar terrain, develop ways to "exchange" personnel among MLRS installations and training sites without moving equipment.

   All units reported limitations in their ability to keep training effective, interesting, and even to train at all. This finding supports the following recommendations.

4. To provide lower-cost and more-flexible training, develop or acquire

   a capability to train on processing fire missions without using the SPLL-mounted FCS (e.g. by setting up

a system in a training facility similar to that at the School, or by mounting the system on wheeled vehicles which could be used also to train on terrain appreciation and map reading, movement techniques, resupply);

a sand-table kit and supporting training materials for training on tactics; use of terrain, including selection of hide, firing, resupply points; shoot-and-scoot; resupply; vehicle recovery; and maintenance.

5. To provide more advanced and realistic tactical training, take advantage of the state of the art in TADSS to develop a MLRS system on the order of SIMNET. This could provide an opportunity for battery- and platoon-level training exercises that incorporate realistic fire-mission processing, coordination with FA and maneuver elements, movement, and resupply.

6. To give MLRS units an opportunity to train in accordance with current doctrine, to train as elements of joint/combined arms task forces, and in general to train as they will fight; as well as to train higher elements on the requirements and capabilities of the MLRS; establish an MLRS permanent facility at NTC, including an MLRS separate battery, maintenance facility, and hardware sufficient to field at least a firing platoon and an ammunition section with each rotation. Rotate only the personnel.

All units reported that live fire was an important part of a training program but differed in the number of rockets they felt were required. Also, the restrictions on live fire were numerous and degraded its training value. This finding supports the following recommendation.

7. Live fire should be considered in terms of its place in a total training system which includes TADSS, field training, and live fire. Therefore, the question of the number of rounds required annually per battery should be deferred until such a system is designed.

All units reported that training is impaired by turnover and turbulence in unit members. The most commonly reported need in new school graduates was for driver training and experience. This finding supports the following recommendation.

8. To lessen the impact of turnover by making newly assigned personnel capable of more immediately entering into unit

training, carefully consider strengthening HEMTT and SPLL driver training portions of 13M AIT.

A shortage of training publications was widely reported in the units, and that this shortage was seriously detrimental for training. This finding supports the following recommendation.

9. To facilitate the installation and bolster the effectiveness of the recommended training package, concurrently develop and install a system that will ensure

the distribution of the system itself, along with pertinent training publications, devices, and materials, and

feedback to USAFAS on the utility of the package and on needs for revision and adaptation.

CONCLUSIONS

The purpose of this survey was to examine training, training evaluation, and training conditions in MLRS units to determine if the present training strategy was valid. The results presented in this report show that generally it is not. This is not a problem of an individual post, commander, leader, or soldier. It is a system problem that is rooted in the nature of the MLRS and real-world constraints in equipment, training areas, and resources. Although many low-level tasks for the MLRS are relatively simple, the MLRS as a system is inherently hard to train in a doctrinally-correct manner.

The MLRS training strategy needs to be rethought. As land and training area limitations are real and not likely to improve greatly, and as OPTEMPO will likely be reduced in the future rather than increased, considerable ingenuity will be required to train realistically and on skills which are not now being well developed. Some training support products already in development or recently fielded may alleviate some of the problems identified. Use of non-tracked vehicles in some training might reduce the limitations on movement that produce terrain overfamiliarity. All respondents agreed that live fire was required, but the extreme limitations on its use certainly raise questions of how much live fire is cost-effective. Several respondents identified a need for practice rockets that would reduce the restrictions on live fire. The MLRS system is also a prime candidate for training aids, devices, simulators, and simulations (TADSS) to improve the effectiveness and realism of training. The question of the number of rockets needed should be addressed in terms of the place of live fire in a total training

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system.  Certainly training with MLRS should be addressed within the Combined Arms Training Strategy (CATS).

Finally, innovative commanders who fully understand the requirements for training MLRS units are, as always, required. One post had a more comprehensive training program than the others.  It certainly can provide some "Lessons Learned" and "Tips for Trainers".  In the separate batteries, the MLRS Battery Commander faces great training problems without the support and supervision available in a battalion.  Many reports, from all echelons, stated that the needs, requirements, and capabilities of the MLRS were generally not well understood throughout the Army.  If this perception is correct, this factor will limit the amount of training guidance, supervision, and support the DIVARTY can provide.  As important, it also will limit the ability of DIVARTY to operationally employ the MLRS.

APPENDIX

SAMPLE

Entries in the columns below describe the respondents in the sample.  Contents of the columns are as follows:

INT NO.     Interview number:  interview and survey information were collected from individuals and groups at 98 interviews.

SITE        Posts are identified by number (1 to 5).

ECHELON     Respondents from Battery, Platoon, and Section are assigned a phantom organizational code, permitting the reader to track responses of individuals by Battery (A thru I) without revealing the identity of the unit.  Firing Platoons are identified as 1 thru 3, the Ammunition Platoon as A.

POSITION    Respondents' positions are identified as follows:

            BNCO - Battalion Commander
            BNS1 - Battalion S-1
            BNS3 - Battalion S-3
            BNS4 - Battalion S-4
            DACO - Division Artillery Commander
            DAS1 - Division Artillery S-1
            DAS3 - Division Artillery S-3*
            DAS4 - Division Artillery S-4
            DTNG - Division Artillery Training Officer
            PAC  - Personnel Administration Clerk
            BYCO - Battery Commander
            BYOO - Battery Operations Officer
            B1SG - Battery First Sergeant
            OPSG - Battery Operations Sergeant
            COMM - Battery Communications Chief
            PLDR - Platoon Leader
            PSGT - Platoon Sergeant
            RECN - Reconnaissance Sergeant
            SCHF - Section Chief
            GUNR - Gunner
            DRIV - Driver
            A/SC - Assistant Section Chief (Ammunition Platoon
                                                      only).


GRADE       Respondent's military rank/grade.

A-1

**PERSONNEL INTERVIEWED AT BATTALIONS AND SEPARATE BATTERIES[*]**
Assessment of MLRS Training Strategy

|  | Battalion | Sep Battery | Total |
|---|---|---|---|
| Battalion Commanders | 2 |  | 2 |
| Battalion Exec Officer | 1 |  | 1 |
| Battalion S1s | 2 |  | 2 |
| Battalion S3s | 2 |  | 2 |
| Battalion S4s | 2 |  | 2 |
|  |  |  |  |
| DIVARTY Commanders |  | 3 | 3 |
| DIVARTY S1s |  | 3 | 3 |
| PAC |  | 1 | 1 |
| DIVARTY S3s |  | 2 | 2 |
| Training Officer |  | 1 | 1 |
| DIVARTY S4s |  | 3 | 3 |
|  |  |  |  |
| Battery Commanders | 6 | 4[**] | 10 |
| Btry Opns Officers | 6 | 1 | 7 |
| Battery First Sergeants | 5 | 0 | 5 |
| Battery Opns Sergeants | 1 | 0 | 1 |
|  |  |  |  |
| Firing Platoon Leaders | 7 | 7 | 14 |
| Firing Platoon Sergeants | 14 | 9 | 23 |
| Firing Section Chiefs | 31 | 27 | 58 |
| Firing Section Gunners | 22 | 15 | 37 |
| Firing Section Drivers | 4 | 3 | 7 |
|  |  |  |  |
| Ammo Platoon Leaders | 3 | 1 | 4 |
| Ammo Platoon Sergeants | 6 | 3 | 9 |
| Ammo Section Chiefs | 14 | 5 | 19 |
| Ammo Section Asst Chiefs | 2 | 3 | 5 |
|  |  |  |  |
| Recon Sergeants | 3 | 0 | 3 |
| Commo NCOs | 1 | 0 | 1 |
|  | **134** | **91** | **225** |

[*]Personnel were drawn from two MLRS Battalions and three Separate
Batteries in CONUS. Units were selected with concurrence of USAFAS as
representative of CONUS MLRS units.

[**]Second Battery Commander had served in this unit and was awaiting
reassignment following change-of-command.

SAMPLE

| Int No. | Site | Echelon Btry | Plt | Sec | Position | Grade | | Int No. | Site | Echelon Btry | Plt | Sec | Position | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | BNCO | 05 | | 13 | 1 | B | 2 | 3 | GUNR | E5 |
| 2 | 1 | | | | BNS1 | 02 | | 14 | 1 | B | A | | PLDR | 02 |
| 3 | 1 | | | | BNS3 | 04 | | 14 | 1 | B | A | | PSGT | E6 |
| 4 | 1 | | | | BNS4 | | | 14 | 1 | B | A | 1 | SCHF | E6 |
| 5 | 1 | A | | | BYCO | 03 | | 14 | 1 | B | A | 3 | SCHF | E6 |
| 5 | 1 | A | | | BYOO | 02 | | 15 | 1 | C | | | BYCO | 03 |
| 5 | 1 | A | | | B1SG | E8 | | 15 | 1 | C | | | BYOO | 02 |
| 5 | 1 | A | | | OPSG | E6 | | 15 | 1 | C | | | B1SG | E8 |
| 6 | 1 | A | 1 | | PSGT | E7 | | 16 | 1 | C | 2 | | PLDR | 02 |
| 6 | 1 | A | 3 | | PSGT | E7 | | 16 | 1 | C | 1 | | PSGT | E7 |
| 6 | 1 | A | A | | PSGT | E7 | | 16 | 1 | C | 2 | | PSGT | E7 |
| 7 | 1 | A | 1 | 1 | SCHF | E5 | | 16 | 1 | C | 3 | | PSGT | E7 |
| 7 | 1 | A | 1 | 1 | GUNR | E4 | | 16 | 1 | C | A | | PSGT | E6 |
| 7 | 1 | A | 1 | 2 | SCHF | E6 | | 17 | 1 | C | 1 | 1 | SCHF | E6 |
| 7 | 1 | A | 1 | 2 | GUNR | E5 | | 17 | 1 | C | 1 | 1 | GUNR | E5 |
| 8 | 1 | A | 2 | 1 | SCHF | E6 | | 17 | 1 | C | 1 | 1 | DRIV | E4 |
| 8 | 1 | A | 2 | 2 | SCHF | E6 | | 17 | 1 | C | 1 | 3 | SCHF | E6 |
| 8 | 1 | A | 2 | 3 | SCHF | E6 | | 17 | 1 | C | 1 | 3 | GUNR | E5 |
| 8 | 1 | A | 2 | | RECN | E6 | | 18 | 1 | C | 2 | 1 | SCHF | E6 |
| 9 | 1 | A | 3 | 1 | SCHF | E6 | | 18 | 1 | C | 2 | 1 | GUNR | E5 |
| 9 | 1 | A | 3 | 1 | GUNR | E5 | | 18 | 1 | C | 2 | 2 | SCHF | E5 |
| 9 | 1 | A | 3 | 2 | SCHF | E5 | | 18 | 1 | C | 2 | 2 | GUNR | E5 |
| 9 | 1 | A | 3 | 2 | GUNR | E5 | | 18 | 1 | C | 2 | 3 | SCHF | E6 |
| 9 | 1 | A | 3 | 3 | SCHF | E5 | | 18 | 1 | C | 2 | 3 | GUNR | E5 |
| 9 | 1 | A | 3 | 3 | GUNR | E5 | | 19 | 1 | C | 3 | 1 | SCHF | E6 |
| 9 | 1 | A | | | COMM | E5 | | 19 | 1 | C | 3 | 1 | GUNR | E5 |
| 10 | 1 | A | A | 1 | SCHF | E5 | | 19 | 1 | C | 3 | 2 | SCHF | E6 |
| 10 | 1 | A | A | 2 | SCHF | E5 | | 19 | 1 | C | 3 | 2 | GUNR | E5 |
| 10 | 1 | A | A | 3 | SCHF | E5 | | 19 | 1 | C | 3 | 3 | SCHF | E6 |
| 11 | 1 | B | | | BYCO | 03 | | 19 | 1 | C | 3 | 3 | GUNR | E5 |
| 11 | 1 | B | | | BYOO | 02 | | 20 | 1 | C | A | 1 | SCHF | E5 |
| 11 | 1 | B | | | B1SG | E8 | | 20 | 1 | C | A | 1 | A/SC | E5 |
| 12 | 1 | B | 1 | | PLDR | 02 | | 20 | 1 | C | A | 2 | SCHF | E6 |
| 12 | 1 | B | 1 | | PSGT | E6 | | 20 | 1 | C | A | 2 | A/SC | E5 |
| 12 | 1 | B | 2 | | PSGT | E7 | | 21 | 2 | | | | BNCO | 05 |
| 13 | 1 | b | 2 | 1 | SCHF | E6 | | 22 | 2 | | | | BNXO | 04 |
| 13 | 1 | B | 2 | 1 | GUNR | E5 | | 23 | 2 | | | | BNS1 | 03 |
| 13 | 1 | B | 2 | 2 | SCHF | E6 | | 24 | 2 | | | | BNS3 | 04 |
| 13 | 1 | B | 2 | 2 | GUNR | E5 | | 25 | 2 | | | | BNS4 | 03 |
| 13 | 1 | B | 2 | 3 | SCHF | E6 | | 26 | 2 | D | | | BYCO | 03 |
| | | | | | | | | 26 | 2 | D | | | BYOO | 02 |
| | | | | | | | | 27 | 2 | D | 1 | | PLDR | 02 |
| | | | | | | | | 27 | 2 | D | 1 | | PSGT | E7 |
| | | | | | | | | 27 | 2 | D | 2 | | PLDR | 02 |

A-3

SAMPLE

| Int No. | Site | Echelon Btry | Plt | Sec | Position | Grade |
|---|---|---|---|---|---|---|
| 27 | 2 | D | 2 |  | PSGT | E6 |
| 27 | 2 | D | 3 |  | PLDR | 01 |
| 27 | 2 | D | 3 |  | PSGT | E6 |
| 28 | 2 | D | 1 | 1 | SCHF | E5 |
| 28 | 2 | D | 1 | 1 | GUNR | E4 |
| 28 | 2 | D | 1 | 2 | SCHF | E5 |
| 28 | 2 | D | 1 | 3 | SCHF | E5 |
| 28 | 2 | D | 1 | 3 | GUNR | E4 |
| 28 | 2 | D | 3 | 2 | GUNR | E5 |
| 29 | 2 | D | 3 | 1 | SCHF | E5 |
| 29 | 2 | D | 3 | 1 | GUNR | E4 |
| 29 | 2 | D | 3 | 2 | SCHF | E6 |
| 29 | 2 | D | 3 | 2 | GUNR | E5 |
| 29 | 2 | D | 3 | 3 | SCHF | E6 |
| 30 | 2 | D | A |  | PLDR | 01 |
| 30 | 2 | D | A |  | PSGT | E7 |
| 30 | ? | D | A | 1 | SCHF | E6 |
| 30 | 2 | D | A | 2 | SCHF | E6 |
| 30 | 2 | D | A | 3 | SCHF | E5 |
| 31 | 2 | E |  |  | BYCO | 03 |
| 31 | 2 | E |  |  | BYOO | 22 |
| 31 | 2 | E |  |  | B1SG | E8 |
| 32 | 2 | E | 3 |  | PLDR | 02 |
| 32 | 2 | E | 2 |  | PSGT | E7 |
| 33 | 2 | E | 2 | 1 | SCHF | E5 |
| 33 | 2 | E | 2 | 1 | DRIV | E4 |
| 33 | 2 | E | 2 | 2 | SCHF | E5 |
| 33 | 2 | E | 2 | 2 | DRIV | E4 |
| 33 | 2 | E | 2 | 3 | SCHF | E6 |
| 33 | 2 | E | 2 | 3 | DRIV | E3 |
| 34 | 2 | E | A |  | PLDR | 02 |
| 34 | 2 | E | A |  | PSGT | E5 |
| 34 | 2 | E | A | 1 | SCHF | E5 |
| 34 | 2 | E | A | 2 | SCHF | E5 |
| 34 | 2 | E | A | 3 | SCHF | E5 |
| 35 | 2 | F |  |  | BYCO | 03 |
| 35 | 2 | F |  |  | BYOO | 02 |
| 35 | 2 | F |  |  | B1SG | E8 |
| 36 | 2 | F | 3 |  | PLDR | 01 |
| 36 | 2 | F | 1 |  | PSGT | E7 |
| 36 | 2 | F | 2 |  | PSGT | E7 |
| 36 | 2 | F | 3 |  | PSGT | E6 |
| 37 | 2 | F | 2 |  | RECN | E4 |
| 37 | 2 | F | 1 | 1 | SCHF | E5 |
| 37 | 2 | F | 1 | 2 | SCHF | E5 |
| 37 | 2 | F | 3 |  | RECN | E4 |
| 37 | 2 | F | 3 | 1 | SCHF | E6 |
| 37 | 2 | F | 3 | 1 | GUNR | E5 |
| 38 | 2 | F | A |  | PSGT | E7 |
| 38 | 2 | F | A | 1 | SCHF | E5 |
| 39 | 3 |  |  |  | DACO | 06 |
| 40 | 3 |  |  |  | DAS1 | 04 |
| 41 | 3 |  |  |  | DTNG | 03 |
| 42 | 3 |  |  |  | DAS4 | 04 |
| 43 | 3 |  |  |  | PAC | E6 |
| 44 | 3 | G |  |  | BYCO | 03 |
| 45 | 3 | G |  |  | BYCO | 03 |
| 46 | 3 | G | 1 |  | PLDR | 02 |
| 46 | 3 | G | 1 |  | PSGT | E7 |
| 47 | 3 | G | 2 |  | PLDR | 02 |
| 47 | 3 | G | 2 |  | PSGT | E6 |
| 48 | 3 | G | 3 |  | PLDR | 01 |
| 48 | 3 | G | 3 |  | PSGT | E7 |
| 49 | 3 | G | 1 | 1 | SCHF | E5 |
| 49 | 3 | G | 1 | 1 | GUNR | E4 |
| 50 | 3 | G | 1 | 2 | SCHF | E6 |
| 50 | 3 | G | 1 | 2 | DRIV | E2 |
| 51 | 3 | G | 1 | 3 | SCHF | E6 |
| 52 | 3 | G | 2 | 1 | SCHF | E5 |
| 52 | 3 | G | 2 | 1 | GUNR | E4 |
| 53 | 3 | G | 2 | 2 | SCHF | E6 |
| 53 | 3 | G | 2 | 2 | GUNR | E4 |
| 54 | 3 | G | 2 | 3 | SCHF | E6 |
| 54 | 3 | G | 2 | 3 | GUNR | E4 |
| 55 | 3 | G | 3 | 1 | SCHF | E5 |
| 55 | 3 | G | 3 | 1 | GUNR | E4 |
| 55 | 3 | G | 3 | 2 | SCHF | E6 |
| 55 | 3 | G | 3 | 2 | GUNR | E4 |
| 55 | 3 | G | 3 | 3 | SCHF | E6 |
| 55 | 3 | G | 3 | 3 | GUNR | E4 |
| 56 | 3 | G | A |  | PSGT | E7 |
| 57 | 4 |  |  |  | DACO | 06 |
| 58 | 4 |  |  |  | DAS1 | 03 |
| 59 | 4 |  |  |  | DAS3 | 05 |
| 60 | 4 |  |  |  | DAS4 | 03 |
| 61 | 4 | H |  |  | BYCO | 03 |
| 62 | 4 | H |  |  | BYOO | 02 |
| 63 | 4 | H | 1 |  | PSGT | E7 |

SAMPLE

| Int No. | Site | Echelon Btry | Plt | Sec | Position | Grade | Int No. | Site | Echelon Btry | Plt | Sec | Position | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 64 | 4 | H | 1 | 1 | SCHF | E6 | 94 | 5 | I | 3 | 2 | SCHF | E6 |
| 65 | 4 | H | 1 | 2 | SCHF | E6 | 94 | 5 | I | 3 | 2 | GUNR | E4 |
| 66 | 4 | H | 1 | 3 | SCHF | E6 | 95 | 5 | I | 3 | 3 | SCHF | E6 |
| 67 | 4 | H | 2 | | PLDR | 02 | 95 | 5 | I | 3 | 3 | GUNR | E5 |
| 67 | 4 | H | 2 | | PSGT | E7 | 96 | 5 | I | A | | PSGT | E6 |
| 68 | 4 | H | 2 | 1 | SCHF | E6 | 97 | 5 | I | A | 1 | SCHF | E6 |
| 69 | 4 | H | 2 | 2 | SCHF | E6 | 97 | 5 | I | A | 1 | A/SC | E5 |
| 69 | 4 | H | 2 | 2 | GUNR | E5 | 98 | 5 | I | A | 2 | SCHF | E5 |
| 70 | 4 | H | 2 | 3 | SCHF | E6 | 98 | 5 | I | A | 2 | A/SC | E4 |
| 70 | 4 | H | 2 | 3 | GUNR | E5 | | | | | | | |
| 71 | 4 | H | 3 | | PLDR | 02 | | | | | | | |
| 71 | 4 | H | 3 | | PSGT | E6 | | | | | | | |
| 72 | 4 | H | 3 | 1 | SCHF | E6 | | | | | | | |
| 72 | 4 | H | 3 | 1 | DRIV | E3 | | | | | | | |
| 73 | 4 | H | 3 | 2 | SCHF | E5 | | | | | | | |
| 73 | 4 | H | 3 | 2 | DRIV | E2 | | | | | | | |
| 74 | 4 | H | 3 | 3 | SCHF | E5 | | | | | | | |
| 74 | 4 | H | 3 | 3 | GUNR | E4 | | | | | | | |
| 75 | 4 | H | A | | PLDR | 02 | | | | | | | |
| 75 | 4 | H | A | | PSGT | E7 | | | | | | | |
| 76 | 4 | H | A | 1 | SCHF | E6 | | | | | | | |
| 77 | 4 | H | A | 2 | SCHF | E5 | | | | | | | |
| 78 | 4 | H | A | 3 | SCHF | E6 | | | | | | | |
| 78 | 4 | H | A | 3 | A/SC | E4 | | | | | | | |
| 79 | 5 | | | | DACO | 06 | | | | | | | |
| 80 | 5 | | | | DAS1 | 04 | | | | | | | |
| 81 | 5 | | | | DAS3 | 04 | | | | | | | |
| 82 | 5 | | | | DAS4 | 03 | | | | | | | |
| 83 | 5 | I | | | BYCO | 03 | | | | | | | |
| 84 | 5 | I | 1 | | PLDR | 01 | | | | | | | |
| 84 | 5 | I | 1 | | PSGT | E7 | | | | | | | |
| 85 | 5 | I | 1 | 1 | SCHF | E6 | | | | | | | |
| 85 | 5 | I | 1 | 1 | GUNR | E5 | | | | | | | |
| 86 | 5 | I | 1 | 2 | SCHF | E6 | | | | | | | |
| 87 | 5 | I | 1 | 3 | SCHF | E6 | | | | | | | |
| 88 | 5 | I | 2 | | PSGT | E7 | | | | | | | |
| 89 | 5 | I | 2 | 1 | SCHF | E6 | | | | | | | |
| 90 | 5 | I | 2 | 2 | SCHF | E5 | | | | | | | |
| 90 | 5 | I | 2 | 2 | GUNR | E5 | | | | | | | |
| 91 | 5 | I | 2 | 3 | SCHF | E5 | | | | | | | |
| 92 | 5 | I | 3 | | PLDR | 01 | | | | | | | |
| 92 | 5 | I | 3 | | PSGT | E7 | | | | | | | |
| 93 | 5 | I | 3 | 1 | SCHF | E5 | | | | | | | |
| 93 | 5 | I | 3 | 1 | GUNR | E4 | | | | | | | |

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