TC 3-27.9

GROUND-BASED MIDCOURSE DEFENSE (GMD) GUNNERY PROGRAM

JULY 2018

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Headquarters, Department of the Army

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Headquarters
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Washington, DC,5 July 2018

Ground-based Midcourse Defense (GMD) Gunnery Program

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Preface

The purpose of this Training Circular (TC) is to develop and test the proficiency of the individual crewmembers and crews in gunnery techniques. This program standardizes Ground-based Midcourse Defense (GMD) gunnery training and gunnery skill qualifications through performance-oriented, sequential, progressive, realistic, and challenging training. This TC references the current training drills, Soldier's Training Publications, and Mission Training Plans (DTMS) identifying the tasks and subtasks to be performed by individuals and crews for precertification tables leading up to certification tables. The functional and operational procedures for the battalion and brigade crews may reference this TC.

Note: Reference to applicable standard operating procedure includes, but is not limited to, the tactical standard operating procedure (TSOP).

This manual applies to the Active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the United States Army Reserves (USAR) unless otherwise stated. This publication is available at Army Knowledge Online (https://armypubs.us.army.mil/doctrine/index.html). To receive publishing updates, please subscribe at https://armypubs.army.mil/AdminPubs/new_subscribe.asp.

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Introduction

Effective missile defense operations require high fidelity data from forward based sensors in order to quickly respond to threats that can affect the defense of the United States (US) homeland, deployed troops, friends, allies and forward based assets. System capabilities of the Ground-based Midcourse Defense (GMD) detect and track missile launches in their boost and midcourse phase, and are be able to respond to and destroy threats to the United State Northern Commander (USNORTHCOM) defended area. The GMD Gunnery Program supports US missile defense operations through its ability to accurately train Soldiers in GMD Fire Control system operations to maximize the number of opportunities the US will have available to intercept and negate a threat while minimizing collateral damage to the homeland and global assets. A timely and accurate portrait of every threat coupled with standardized response is essential to achieving the highest level of missile defense.

The GMD Gunnery Program is established to provide a standardized training and evaluation systems as applied to an individual operator or to a crew. The GMD Gunnery Program is designed to develop and test proficiency of the individual operator and crews in gunnery techniques. This program standardizes GMD gunnery training and gunnery skill qualifications through performance-oriented, sequential, progressive, operationally realistic and challenging training.

This GMD Gunnery Program applies to USASMDC/ARSTRAT (as the higher headquarters), the 100th Missile Defense Brigade (GMD) (100th MD BDE), and the 49th Missile Defense Battalion (GMD) (49th MD BN), with focus on the Operational Elements (OE) of the 100th MD BDE and 49th MD BN. The standards and procedures within this document apply to all Army personnel assigned to applicable positions within those elements, regardless of status (Active Army, National Guard, or Reserve).

This document includes some material previously published in the USASMDC/ ARSTRAT Certification Standard Operating Procedure. However, this doctrinal product does not preclude USASMDC/ARSTRAT from maintaining a headquarters-level standard operating procedure to augment material identified in this TC.

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Chapter 1

GMD & GMD Fire Control Systems

NSPD 23 Extract

"The new strategic challenges of the 21st Century require us to think differently, but they also require us to act. The deployment of effective missile defenses is an essential element of the United States' broader efforts to transform our defense and deterrence policies and capabilities to meet the new threats we face. Defending the American people against these new threats is my highest priority as Commander in Chief, and the highest priority of my administration."

President George W. Bush
National Security Presidential Directive (NSPD) 23

Training tables (Chapter 3 - Gunnery Tables and Chapter 4 – GMD Battle Management Levels) provide mandatory standards and training strategies for the GMD units. DA Pamphlet 350-38 guideline standards, brigade-training strategy and established crew drills outline training requirements. Training tables focus on preparing the individual to perform as part of a standardized crew and the crew to perform the GMD mission at one of the operational elements (OEs). The strategies outlined in this document state the minimal requirements for certification, provide commanders with a guide to reach unit goals, and sustain or improve individual/crew proficiency.

GENERAL

1-1. Global ballistic missile defense is a United States Strategic Command (USSTRATCOM) mission to coordinate the employment of global ballistic missile defense assets and strike forces to defeat ballistic missile attacks in all phases of flight or prior to their launch, and to defend US deployed forces, friends and allies. Global ballistic missile defense is any defensive measure designed to destroy, nullify, or reduce the effectiveness of an adversary's ballistic missile attack and designed around a layered defense (illustrated in Figure 1-1). Threats may or may not cross Geographic Combatant Commander areas of responsibility and may require coordination or integration among the affected combatant commands.

GMD SYSTEM

1-2. The GMD system is a distributed system of worldwide contributing sensors that operate in synchronous effort to defend against a limited ballistic missile attack against the United States homeland. GMD is the principle system for strategic missile defense of the US homeland designed to defeat an attack in the midcourse phase of flight. Elements of the GMD system that provide threat track data to the GMD fire control include Space-Based Infrared System, Upgraded Early Warning Radars, COBRA DANE radar, Aegis Ballistic Missile Defense with the AN/SPY-1 radar, the Sea-Based X-band radar (SBX), and the AN/TPY-2 Forward Based Mode (FBM) radars.

1-3. The GMD system defends the US homeland against a limited intermediate-range and intercontinental ballistic missile attack to selected defended areas, engaging threats in the exoatmosphere as directed by the weapon release authority to meet Commander's intent. Figure 1-1 illustrates the three ballistic missile phases of flight relevant to GMD.

GMD FIRE CONTROL SYSTEM

1-4. The GMD fire control system orchestrates the battle by integrating threat, sensor and weapon information in one common operational picture (COP) to produce a fire solution to defend against each threat. The GMD fire control system is the brains of the GMD system the US uses to defend against a limited ballistic missile attack. Additionally, the GMD fire control system allows operator oversight and control over the entire process.

a. The two GMD fire control centers from which operators direct resources during the GMD battle are:
   (1) The Missile Defense Element (MDE) located at Schriever Air Force Base, Colorado. The MDE is the OE of the 100th MD BDE.
   (2) The Fire Direction Center (FDC) located at Fort Greely, Alaska. The FDC is the OE of the 49th MD BN.

b. Each center operates with certified Soldiers comprised of five positionally certified crewmembers to conduct day to day, crisis, combat and recovery operations.

c. Fire control for GMD consists of two identically configured nodes. Each node has two identically configured suites of equipment and each suite has six GMD fire control workstations. The MDE 1 and MDE 2 suites are located at Schriever Air Force Base, CO, while the FDC 1 and FDC 2 suites are located at Fort Greely, Alaska. MDE 1 and FDC 1 primarily respond to real-world events, while MDE 2 and FDC 2 function as the crew's primary GMD system trainers. Suite 1 & 2 (operations and training) configuration at MDE and FDC may be swapped to accommodate for equipment outages and upgrades.

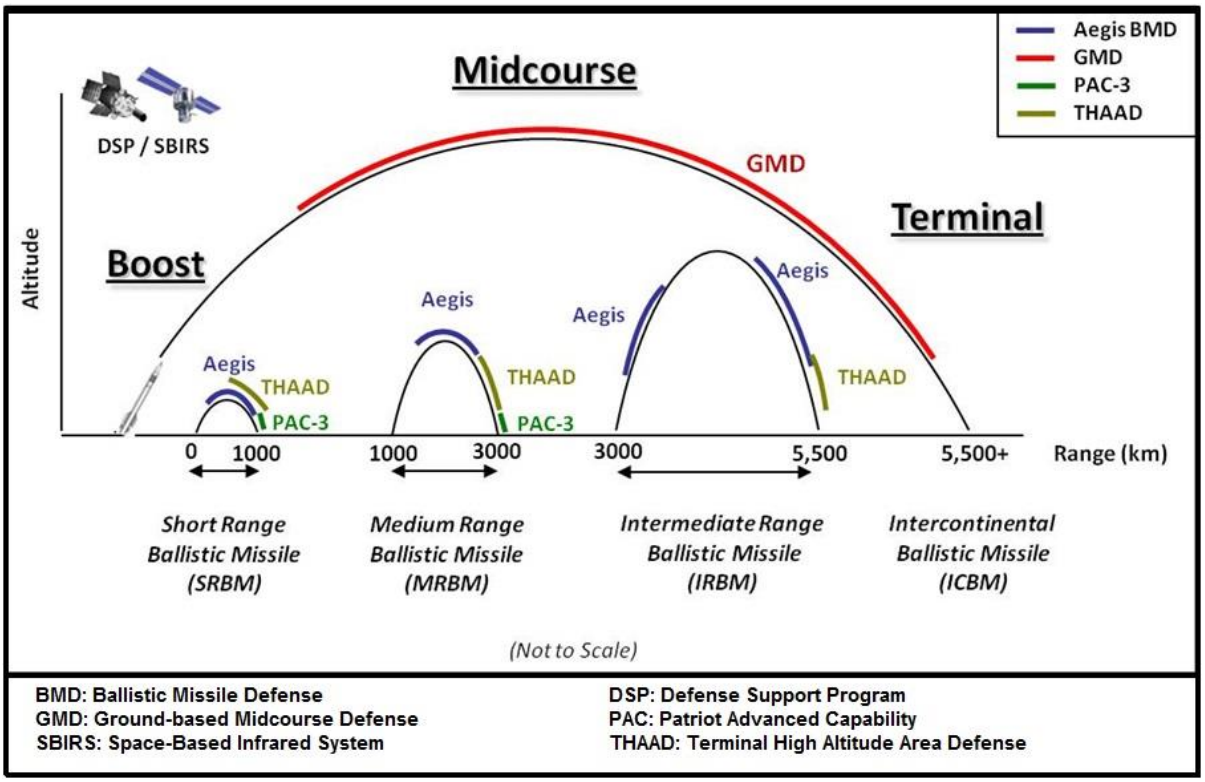


Figure 1-1. Ballistic Missile Phases and Ranges

1-5. The MDE's primary responsibility is to sets the conditions for successful mission execution by interfacing with the United States Northern Command (USNORTHCOM) and overseeing FDC tactical execution of firing doctrine. Their mission is to act in concert with the FDC, change GMD

fire control weapons control statuses, predict the outcome of the battle, redirect FDC battle execution, provide in-depth expertise for system performance and readiness, and report battle updates to the Missile Defense Officer (MDO) and NORAD/USNORTHCOM Command Center (N2C2) Command Center Director (CCD).

1-6. The five positions at the MDE are:

a. MDE Director (MDE DIR). The MDE DIR is responsible to oversee the GMD system by managing system readiness and reporting system capability. The MDE DIR supervises operational planning and is the primary interface to the N2C2 CCD for weapons release authority, operational recommendations, and decisions. The 100th MD BDE's Modified Table of Organization and Equipment (MTOE) lists the MDE DIR as a Lieutenant Colonel.

b. MDE Deputy Director (DEP). The DEP assists the MDE DIR and performs those duties if the MDE DIR is unavailable. The DEP manages and assesses the MDE and FDC crewmembers. The DEP coordinates tactical recommendation from the FDC prior to transmission to the MDE DIR. The 100th MD BDE's MTOE lists the DEP as a Major.

c. Current Operations Officer (COO). The COO monitors sensor status and readiness; analyzes threat clusters for complex threats, and reports capabilities and mission-impacts to the MDE DIR. The COO compares observed task plan behavior with expected system performance. The COO uses SECRET Internet Protocol Router Network chat to interface with SBX, Aegis ballistic missile defense and AN/TPY-2 (FBM) sensor operations personnel, and uses an Integrated Secure Telephone (IST) to contact COBRA Dane/DIA operations center and SBX mission director assess the impact of sensor operations, training and test activities to the GMD mission. The COO monitors the operations loop in conjunction with the Readiness Officer (RO) for status of engagement criteria from the USSTRATCOM Missile Warning Center (MWC), monitors the command, control, battle management and communications (C2BMC) COP, and reports discrepancies between C2BMC and GMD fire control to the MDE DIR. The 100th MD BDE's MTOE lists the COO as a Captain.

d. Future Operations Officer (FOO). The FOO monitors all engagement activities to include target detection, system readiness, Ground-based Interceptor (GBI) launches, sensor coverage, and communication events to predict GMD fire control behavior and make recommendations to the MDE DIR regarding battle redirection. The 100th MD BDE's MTOE lists the FOO as a Sergeant First Class.

e. Readiness Officer (RO). The RO provides technical expertise to the MDE DIR; manages and reports GMD system readiness and capabilities; assesses activities from operational maintenance, training, exercises and testing to meet system readiness requirements. The RO monitors the operations loop for status of engagement criteria from the MWC. The 100th MD BDE's MTOE lists the RO as a Staff Sergeant.

1-7. The FDC's primary responsibility is to conduct tactical mission execution, which is to 'fight the battle the GMD fire control can see'. Their mission is to ensure successful GMD mission execution by executing directed changes to weapons posture, executing pre-approved USNORTHCOM firing guidelines, assess tactical situations, executing fire control orders (FCO) and requesting deviations from pre-approved guidance if the situation dictates.

1-8. The five positions at the FDC are:

a. FDC Director (FDC DIR). The FDC DIR oversees tactical mission execution; manages system readiness, system behavior, crew, and reports current capability. The FDC DIR is the primary interface for tactical decisions and for making operational recommendations to the MDE DIR. The 49th MD BN's MTOE lists the FDC Director as a Major.

b. Battle Analyst (BA). The BA ensures tactical mission execution; assesses the GMD system's execution behavior and performance, reports tactical execution to the MDE DEP; and in the event of a failover, is the primary interface for tactical decisions and

operational recommendations to the N2C2 CCD. The 49th MD BN's MTOE lists the BA as a Captain.

c. Sensors Operator (SO). The SO monitors sensor status and readiness, enters readiness status changes into the GMD fire control, reports capabilities and mission impacts to the FDC DIR, compares expected performance with observed task plan behavior; monitors reports from the MWC, and assesses the impact of sensor operations, training and test activities to the GMD mission. The SO monitors the C2BMC COP and reports discrepancies between C2BMC and GMD fire control to the FDC DIR. The 49th MD BN's MTOE lists the SO as a 1st Lieutenant.

d. Weapons Operator (WO). The WO monitors the GBI subsystem and carries out operational control of GBI sites as directed by the FDC DIR. The WO manages GBI readiness and reports status, assesses GBI performance versus predicted outcomes, and makes recommendations to the FDC DIR regarding battle redirection. The 49th MD BN's MTOE lists the WO as a Staff Sergeant.

e. Communications Operator (CO). The CO maintains and monitors GMD communications and information systems, and is the primary system administrator for FDC's GMD fire control. The CO assesses performance of the FDC's GMD fire control, and the In-Flight Interceptor Communications System (IFICS) during an engagement, enters readiness status changes into the GMD fire control, reports capabilities and mission impacts to the FDC DIR. The 49th MD BN's MTOE lists the CO as a Sergeant.

1-9. Nominal GMD operations consist of a full complement of five Soldiers at both the MDE and the FDC. When one Operations Center becomes inoperable due to equipment failure, natural disaster, fire or other unforeseen catastrophic circumstances failover procedures occur. The remaining center will use failover procedures to take responsibility for both operational and tactical responsibilities. System software / hardware upgrades and test may also drive failover procedures. Figure 1-2 shows a relative comparison in positions between the MDE and FDC.

Missile Defense Element (MDE) Positions				
Director	Deputy Director	Current Operations Officer	Future Operations Officer	Readiness Officer
LTC/O5	MAJ/O4	CPT/O3	SFC/E7	SSG/E6

Fire Direction Center (FDC) Positions				
Director	Battle Analyst	Sensors Operator	Weapons Operator	Communications Operator
MAJ/O4	CPT/O3	1LT/O2	SSG/E6	SGT/E5

Figure 1-2. Organization of Crew Positions

TRAINING DEVICES

1-10. The Distributed Multi-Echelon Training System (DMETS) provides simulated data into the GMD system trainer for training and evaluations. DMETS provides distributed ballistic missile defense scenario generation capability, across all execution levels (from integrated joint participation to individual unit training), in a live, virtual and constructive environment for

initial/proficiency training, certifications, mission rehearsals, exercises and tactics, techniques, and procedure development. DMETS enables Warfighters to train where and how they fight by injecting realistic, interactive, threat scenarios that address all phases of the engagement with varied threats, sensor and shooter combinations. DMETS interfaces with, and injects simulated data into the GMD system trainer and utilized to the maximum extent possible when conducting OREs. DMETS or GMD system trainer training conducted in standalone configuration is acceptable for training purposes.

1-11. The GMD system trainer is a server connected to MDE 1 & 2, and FDC 1 & 2 to facilitate training for GMD crewmembers. It is comprised of the GMD fire control terminals, hardware, firmware, software, and simulation scenarios. The GMD system trainer runs pre-selected simulations that display high quality threat and sensor modeling to allow a GMD crew to react to varying situations in the same manner they would if conducting real-world missile defense operations. The GMD system trainers operate in a nominal configuration simulating missile defense operations with both the MDE and FDC participating, or in single node operation.

1-12. One suite at each node (for example MDE 2) may be used to conduct training/exercises while the other (MDE 1) is configured for real-world operations using the concurrent test, training and operation (CTTO) capability without impact to the GMD mission. CTTO uses automated notification of real-world events with a manual switch box to toggle between real-world status and the training simulation. CTTO is an essential element of the GMD fire control system which allows crews to maintain mission capability during proficiency training, the conduct of evaluations, software/hardware upgrades, or configuration lockdowns for live flight operations.

1-13. Priority of use:

a. FDC 1/2 will use the CTTO capability to conduct training and evaluations.

b. MDE 1/2 will use the CTTO capability to conduct training and evaluations.

c. If the CTTO capability is not available on the operational system to conduct training and evaluations, utilize the GMD system trainer at FDC or MDE. However, training objectives should be restricted to basic GMD fire control screen navigation and reporting.

EXPECTATIONS

1-14. Training conducted in accordance with GMD gunnery tables will be of sufficient breadth and depth to ensure crewmembers and crews are proficient on the GMD system and all its application.

1-15. Evaluations cannot measure all criteria for every position. However, evaluations will be challenging, fair, and designed to measure a Soldiers performance in a broad sampling of required tasks.

a. Units manage their battle-rosters to ensure certified individuals (table IV) and crews (table VIII, XII) provide continuity of operations at all times. GMD operations will not be interrupted due to the lack of certified operators or crews.

b. ORE team members should be GMD subject matter experts. They should be capable of transitioning between unbiased evaluators during an ORE to approachable coaches, teachers and mentors during after action reports (AAR).

c. Although not required, ORE team members should consider removing themselves as an evaluator for someone they have been a supervisor/subordinate to, have been the individual's trainer, or have a close relationship with the trainee. So as to eliminate bias and avoid the perception of favoritism. Due to the limited number of Soldiers certified to conduct/evaluate GMD operations, it may not be possible to prevent this situation from occurring.

d. ORE AARs and official out-briefs will provide an accurate picture of individual and crew strengths and weaknesses. These will facilitate the development of training guidance and aid trainers in refining strategies and plans to sustain and improve specific tasks.

Chapter 2

Certification Requirements

The purpose of this chapter is to provide general guidance on the development and conduct of the GMD gunnery Tables IV, VIII and XII within the 100th MD BDE. The training environment should be as realistic as possible and challenging for the Soldiers. Evaluations must replicate real world situations and potential future operations enabling Soldiers to perform at all levels.

GENERAL

2-1. Table IV evaluations assess individual Soldier knowledge and proficiency. Table VIII and table XII evaluations are collective events that provide a means for instilling crew integrity, teamwork, and unit cohesiveness. Table IV, VIII and XII evaluations are used as a tool to validate the training of GMD crewmembers. USASMDC/ARSTRAT is responsible for certifying GMD crewmembers and crews to perform the USNORTHCOM directed mission of homeland defense against limited ballistic missile attacks from rogue states. The functions of the USASMDC/ARSTRAT GMD certification program are to:

a. Ensure the highest degree of mission accomplishment in accordance with the combatant commander's intent and the 100th MD BDE Tactical Standard Operating Procedure (TSOP).

b. Ensure standardization of TTPs and support materials for the GMD mission.

c. Ensure operating procedures meet mission requirements.

d. Ensure the 100th MD BDE certification program meets the supported combatant commander's standards.

e. Identify specific requirements for both positional and crew certification for GMD gunnery tables IV, VIII and XII performance.

f. Identify individual and crew performance strengths, weaknesses and trends.

g. Validate GMD training and mission execution.

CERTIFICATION CONCEPT

2-2. The Commander, USASMDC/ARSTRAT has the responsibility and authority to develop and maintain certified GMD crewmembers for the combatant commander. The goal of the certification program is to ensure standardization between positions and crews, and establish performance proficiency of GMD operators and crews. Prior to standing unsupervised GMD crew duty, all GMD operators must successfully complete table VII evaluation requirements as identified in this document, and all battle-rostered crews must maintain a table VIII certification.

a. Upon completion of GMD gunnery tables I-III, and with the recommendation from the Soldier's S-3, the crewmember must undergo table IV evaluation. Upon completion of gunnery tables V-VII, and with the recommendation from the unit S-3, the crew must undergo table VIII evaluation. Upon completion of gunnery tables IX-XI, and with the recommendation from the BDE/BN S-3, the crew will undergo table XII evaluation. The BDE/BN ORE Team conducts Table IV and Table VII evaluations. The next higher headquarters ORE team conducts Tables VIII and XII evaluations. The ORE team will

make certification recommendations to the certifying authority based on evaluation results.

b. GMD gunnery table IV evaluation consists of a written evaluation to assess operator knowledge and a hands-on positional evaluation to assess proficiency. The crewmember must achieve a minimum of 90% on the written exam as well as maintain a minimum score of 90 points on two positional evaluation scenarios. The evaluation scenarios will consist of one nominal and one failover scenario in order for the crewmember to become table IV certified. Semi-annual certifications are only valid for 180 days.

c. GMD gunnery table VIII is the "proficient" level for battle-rostered crews and only conducted for battle-rostered crews. To be eligible for a battle-roster crew, each member of the five-person crew must be table IV certified in their individual position, and successfully complete all other table V through VII quantitative, engagement procedures, compliance, administrative assessment and subjective assessment certification requirements. The crew is scored as a single entity and must maintain a minimum score of 90 points on two evaluation scenarios, consisting of one nominal and one failover scenario, in order to become table VIII certified.

d. GMD gunnery Table IV and VIII should be conducted with full participation of both centers. Single node evaluation is authorized to be conducted when only one node is available due to software upgrades or operational configuration constraints.

e. Crew Directors and DEP/BAs may receive up to two additional hands-on scenarios at the discretion of the ORE team to evaluate additional common GMD operator tasks to assess leadership oversight and task coverage. In this operational configuration, failover scenarios are sufficient for this task.

f. When certified operators transfer between nodes (i.e. MDE to FDC or FDC to MDE) must complete the certification process for the gaining center.

g. All evaluations/certification events are conducted In accordance with United States Code, Title 10 *Armed Forces*.

CONDUCT OF EVALUATIONS

2-3. Professional behavior will be displayed by all individuals involved in and interacting with the evaluation (e.g. ORE team, the individual or crew undergoing evaluation, supporting staff, on-duty crewmembers not directly participating in the evaluation). Individuals or crews undergoing an evaluation will be provided full respect and consideration during the evaluation and all attempts will be made to avoid non-mission related interruptions.

a. If an unplanned equipment-related problem occurs during an evaluation, the ORE team chief has the authority to make a decision to continue or terminate the ORE, based on the impact to the evaluation due to the loss of equipment, suitability of alternative options, and the estimated time to restore the problematic equipment.
   (1) If the evaluation continues and the equipment failure is not consistent with the evaluation objectives (e.g. DMETS failure), individual/crew actions taken in response to any erroneous indications provided during the unplanned equipment problem will not negatively affect scoring.
   (2) If the equipment failure is consistent with the evaluation objectives (e.g. unplanned node failover), individual/crew actions taken in response to the indications during the unplanned equipment problem affect scoring since the individual/crew should be capable of properly responding to the indications.

b. If a potentially dangerous issue arises during an evaluation (e.g. unsafe individual/crew actions or unprofessional/confrontational crewmember), the ORE team chief has the authority to make a decision to terminate the ORE or to continue once the issue is resolved.

(1) Evaluations will not be terminated for non-dangerous evaluation-related issues such as not following specific crew procedure or for an all-point deduction error. However, these issues must be resolved in order to render a final decision on the evaluation outcome.
(2) If the ORE team chief continues the evaluation with unresolved issues, the ORE team chief and unit S-3 and/or higher headquarters G-3/S-3 will review the evaluation results and attempt to resolve the issue before determining the final outcome of the evaluation. If ORE team chief and unit S-3 and/or higher headquarters G-3/S-3 cannot reach a solution, the Certification and Evaluation Branch Chief will make a final decision on the evaluation outcome.

RESPONSIBILITIES

2-4. Leaders at all levels are responsible for conducting training and gunnery qualifications according to applicable TCs, Universal Task List, GMD gunnery program, Technical Manuals, Field Manuals (FM), higher headquarters directives, unit Mission Essential Task Lists and guidance from the commander. The crew and evaluators must ensure compliance with all cautions, warnings and danger notices in all manuals. Commanders and leaders are required to make informed risk decisions to ensure conduct of training/certification is in a manner that protects the well-being of the Soldiers in training. Leaders are responsible to mitigate risk during the training/certification program. The prevention of safety violations during all training and evaluation events is a primary consideration during all events. Anyone witnessing a safety violation must halt a drill if danger to personnel or damage to equipment exists.

a. Commanding General (CG), USASMDC/ARSTRAT.
   (1) Responsible for ensuring USASMDC/ARSTRAT certified GMD crewmembers and crews fully staff GMD OEs.
   (2) Responsible for the overall GMD certification program.

b. Deputy Commanding General (DCG), USASMDC/ARSTRAT.
   (1) Responsible for the management of the GMD certification program.
   (2) Certification/decertification authority for 100th MD BDE OE.
   (3) Approval authority for granting waivers to 100th MD BDE OE.
   (4) Appoints evaluators to the USASMDC/ARSTRAT ORE Team.
   (5) Approves all waivers to procedures contained in this TC, as appropriate.

c. G3, USASMDC/ARSTRAT.
   (1) Maintains and administers the USASMDC/ARSTRAT GMD certification program and ensures the program meets combatant commander's standards.
   (2) Develops certification criteria and directs certification procedures.
   (3) Maintains an ORE team to evaluate the 100th MD BDE OE.
   (4) Ensures all evaluators adhere to the standards of the GMD certification program.

a. USASMDC/ARSTRAT G37 Certification and Evaluation Branch.
   (1) Serves as the ORE team chief for USASMDC/ARSTRAT DCG.
   (2) Responsible to the G3 for all matters pertaining to the GMD certification program.
   (3) Administers GMD table VIII and XII evaluations for the BDE-level OE to ensure consistency of mission execution across all positions and crews.
   (4) Maintains records and documentation of GMD crewmembers reflecting table VIII and XII certifications of 100th MD BDE OE crewmembers, crews and ORE team members for two years.
   (5) Schedules, tracks, and reports to the DCG the results of 100th MD BDE OE table VIII and XII certifications.
   (6) Develops and maintains a current, comprehensive database of written tests for all positions.
   (7) Conducts periodic reviews of written evaluations and ORE scripted scenarios for accuracy.
   (8) Initiates the decertification process, if required, for 100th MD BDE OE.

(9) Conducts annual reviews of operations procedures and support material to ensure certification standards reflect the most accurate and current information available.
(10) Conducts AARs and trend analysis upon completion of certifications and for Commander, 100th MD BDE.
(11) Nominates GMD subject matter expert's for assignment to the USASMDC/ARSTRAT ORE team as positional evaluators.
(12) Plans and conducts no-notice evaluations.
(13) Coordinates with external agencies to schedule resources for evaluations and exercises.

b. Commander, 100th MD BDE.
(1) Responsible to CG, USASMDC/ARSTRAT for the 100th MD BDE GMD certification program
(2) Appoints evaluators to the 100th MD BDE ORE Team.
(3) Certification/decertification authority for the 100th MD BDE OE crewmembers and crews.
(4) Approval authority for granting waivers to the 49th MD BN OE.

c. S-3, 100th MD BDE.
(1) Responsible to the Commander, 100th MD BDE for all matters pertaining to the GMD certification program.
(2) Maintains an ORE team to evaluate the 49th MD BN OE crewmembers and crews.
(3) Nominates Soldiers for assignment to the 100th MD BDE ORE team.

d. ORE Team Chief, 100th MD BDE.
(1) Administers GMD table VIII, and XII evaluations on the 49th MD BN OE.
(2) Maintains records and documentation of GMD crewmembers reflecting certifications of 49th MD BN OE crewmembers, crews, and ORE team members for 2 years.
(3) Schedules, tracks and reports results of 49th MD BN OE certifications to USASMDC Certification and Evaluation Branch (G37).
(4) In conjunction with G37, develops and conducts periodic reviews of written tests and ORE scenarios.
(5) Initiates the decertification process, if required, for 49th MD BN OE crewmembers and crews.
(6) In conjunction with G37, conducts annual reviews of operational procedures and support material to ensure certification standards reflect the most current information available.
(7) Conduct AAR and trend analysis upon completion of certifications for Commander, 49th MD BN.
(8) Plan and conducts no-notice evaluations.

CERTIFICATION & DECERTIFICATION

2-5. Certification. Prior to performing unsupervised operations on the operational GMD fire control system Individual operators must be certified. Soldiers follow the formalized process through the training program and prepare them for table IV, VIII and/or XII evaluations.

a. Certification is a formal process by which crewmembers and crews receive written documentation from the certifying official to pull unsupervised shifts in a given position or as an integral crew.

b. The DCG, USASMDC/ARSTRAT is the certification official for the 100th MD BDE. The Commander, 100th MD BDE is the certification official for the 49th MD BN.

c. Procedures for certification are described as follows:
(1) The next higher headquarters conducts VIII and/or XII evaluations.

(2) The ORE team chief receives notification through the S-3 an individual or crew is ready to undergo a table VIII or XII evaluation. Semi-annual evaluations are coordinated jointly between the ORE team chief and the S-3.
(3) The ORE team chief, in conjunction with the unit G-3/S-3 ensures all necessary resources are available and schedules a time to conduct the evaluation when all participants are available.
(a) All Soldiers are required to pass a written test prior to taking the scenario portion of the table IV evaluation.
(b) Written tests must be passed within 30 days of the scenario portion of the Table IV evaluation.
(4) Prior to the start of an evaluation, the ORE team chief will conduct a review of training records to verify the individual or crew has documented completion of the required table training.
(5) If the individual or crew successfully passes the evaluation, the certifying official will document the evaluation by signing a memorandum for record. The memorandum for record will identify the individual, the position in which the individual is certified, the date the certification expires, and the crew to which the Soldier is assigned if battle rostered.

2-6. Decertification. A formal process for removal of an existing certification from an individual crewmember or an entire crew. The CG, USASMDC/ARSTRAT, is the Table VIII decertification official for the MDE and FDC crews. The Commander, 100th MD BDE, is the individual decertification official for the MDE and FDC. The Commander, 49th MD BN, is the FDC individual decertification official for the FDC.

a. Any decertification recommendation will be briefed to the affected G-3/S-3 prior to formal decertification proceedings. Certified crewmembers or crews may be decertified under any of the following circumstances (not all-inclusive):
(1) Failure of a GMD gunnery table IV, VIII or XII.
(2) Commission of a critical error during a real-world, test or exercise event.
(3) G-3/S-3 or commander's assessment of a lack of proficiency.
(4) Commander's discipline of a Soldiers misconduct or other factors.
(5) Loss of security clearance.

b. Procedures for decertification are described as follows:
(1) The ORE team chief (if during an evaluation) or the G-3/S-3 (if during operations) will record the circumstances surrounding the trigger for the decertification recommendation.
(2) The ORE team chief will notify the other of the decertification recommendation.
(3) If the decertification recommendation is warranted, the G-3/S-3 will document the decertification in a memorandum for record.
(4) Any crewmember or crew who fails an ORE is immediately precluded from performing duty while they are decertified.

2-7. Decertification (Administrative). This is the loss of certification resulting from circumstances other than system performance, proficiency or conduct. Certified operators or crews may become decertified for a variety of non-derogatory reasons, including, but not limited to:

a. Individuals:
(1) Failure to complete a Table IV evaluation within 180 days of the last successful Table IV evaluation. (Soldiers certified in more than one position will only be decertified in the specific position which exceeded the 180 day criteria. The soldier will remain certified in any position which falls within the 180 day criteria.)
(2) Failure to complete two shifts (eight or twelve hours in duration) per month in each certified position.
(3) Failure to complete three GMD system trainer scenarios each month, two using nominal procedures and two using failover procedures.
(4) Changing centers, permanent change of station, or reassignment.

b. Crews:
   (1) Failure to pass a Table VIII evaluation within 180 days of the last successful Table VIII evaluation.
   (2) Changes to a battle-roster crew.

2-8. Recertification. The steps to recertify an individual or crew are the same as to certify them. Reference paragraph 2-5 for specific steps.

ADMINISTRATION

2-9. Use of GMD gunnery table IV for certification.
   a. Refer to chapter 3 for information pertaining to the execution of GMD gunnery tables.
   b. The gaining unit Commander will determine a Soldiers specific crew position. All Soldiers will complete tables I through III and be ready for initial table IV within 45 calendar days of completion of the GMD Qualification Course.
   c. All crewmembers must receive a table IV in their assigned position semiannually thereafter not to exceed 180 days to maintain certification. Crewmembers who are dual-certified (i.e. maintain certification in a secondary crew position) are also required to pass an additional table IV in the secondary position every 180 days.
      (1) A crewmember will be decertified and require a table IV for failing to work the required minimum of two shifts per month.
      (2) Dual-certified crewmembers will lose certification in one position for failing to work the required minimum of two shifts per month in that specific position. They will maintain certification in the second position, assuming they perform the required minimum of two shifts per month in the second position.
   d. Battle-roster crewmembers who have successfully completed a table IV in the same position as they are identified on the battle-roster are required to complete the written test every 180 days, but are exempt from future hands-on table IV unless:
      (1) Crewmember fails their semi-annual written test.
      (2) The crew or a crewmember is decertified. Decertification may occur during a real world, exercise or test event.
      (3) Changes to assigned position or OE.
      (4) A major hardware or software change occurs to the GMD fire control that the certification authority considers significant enough to warrant table IV re-certification.
   e. Table IV are individual evaluations designed to determine the crewmembers proficiency at performing their responsible tasks. A *crew save* occurs when a member of the crew intervenes to correct the actions or information of another crewmember. Crew saves are not permitted during a table IV. If a crew save occurs during a table IV, the ORE team will review each situation on an individual basis for extenuating circumstances to determine the severity of the actions. In most cases, the crew save will result in an overall failure of the table IV.

2-10. Use of GMD gunnery table VIII for certification.
   a. This crew certification applies only to crewmembers who are part of battle-rostered crews.
   b. All battle-rostered crewmembers must have passed their Table IV written exams and hands-on (as applicable) not more than 30 days prior to the Table VIII. Changes to certified battle-rostered crews will not affect the status of the crewmember's Table IV certification.
   c. Certified battle-rostered crews will undergo semi-annual Table VIII evaluations every 180 days or sooner if:
      (1) The crew or a crewmember is decertified. Decertification may occur during a real world, exercise or test event.
      (2) Crew integrity changes (e.g. personnel changes to the crew). All Table IV certifications remain valid unless a soldier is decertified for performance related issues.

(3) A major hardware or software change occurs to the GMD fire control system which the certification authority considers significant enough to warrant Table IV recertification.

Note: Hardware or software upgrades do not result in crew or crewmember decertification prior to recertification efforts.

2-11. Use of GMD gunnery Table XII for certification:

a. This crew certification level only applies to Table VIII certified battle-rostered crews.

b. Crews will be certified to a Table XII level when requested to do so by the DCG, USASMDC/ARSTRAT or the commander, 100the MD BDE.

2-13. Training Records.

a. The MDE and FDC will maintain standardized individual training records demonstrating the tasks outlined in this document have been performed to standard in a training environment prior to attempting a table evaluation.

(1) Crew Non-commissioned Officers in Charge (NCOIC) of Training will maintain standardized collective training records for each crewmember demonstrating the tasks outlined in this document have been performed to standard in a training environment prior to attempting a Table IV.

(2) Crew DEPs will maintain standardized collective training records for their crew demonstrating the tasks outlined in this document have been performed to standard in a training environment prior to attempting Tables VIII or XII.

b. Training records will be made available to the evaluation team for training verification inspection prior to an evaluation.

2-13. Scoring. There are 100 points available at the start of every hands-on table scenario, with a maximum of 200 points possible for a successful table evaluation. A minimum score of 90 points is required to pass each table scenario and a cumulative minimum score of 180 points to pass the evaluation. The three types of errors and corresponding point deductions are:

a. Critical Error (all available points deducted) A critical error occurs when a Soldier fails to take prescribed or correct actions and an error results in, or could result in operational mission failure / significant degradation or endangers, or could endanger, human life. A critical error constitutes automatic failure of any ORE.

b. Major Error (four point deduction). A major error occurs when a Soldiers action result in, or could result in, degradation of the operational mission, damage to equipment, failure to notify or incorrect reporting to decision-makers of key information, or a failure to maintain optimal system configuration. These errors demonstrate a lack of understanding of the GMD weapons system and its employment.

c. Minor Error (one point deduction). A minor error occurs when any incorrect action occurs that is not significant enough to meet critical or major error criteria. Minor errors include procedural errors, omissions, and deficiencies.

2-14. Ratings. An overall rating of Uncertified, C[#], or Certified will be added to each individuals Table IV score. An overall rating of Uncertified, C[#], Certified, Superior, or Distinguished will be added to each crew's Table VIII score.

a. Uncertified. An individual or crew that commits a critical error, or retains less than 179 points out of 200 available points for Table VIII or XII, or receives a "NO-GO" on the emergency procedure (Table VIII).

b. C[#]. An individual or crew that failed to qualify on the initial attempt will receive a "C" for "certified" rating with a qualifier indicating the number of attempts required to pass. The individual or crew will receive a maximum of 180 out of 200 points regardless of the actual score during re-evaluation. For example, an individual or crew that passes

an evaluation after failing a previous attempt would receive a score of 180 and an individual or crew rating of C[2] indicating this was their second attempt.

c. Certified. An individual or crew that retains 180-189 points out of 200 available points for Table VIII or XII without losing more than 10 points on any individual scenario receives a “GO” rating on the emergency procedure, with all crewmember passing written tests.

d. Superior. A crew that retains 190-199 points out of 200 available points for Table VIII, without losing more than 5 points on any individual scenario, receives a “GO” rating on the emergency procedure, with all crewmember passing written tests. Applies only to Table VIII ORE.

e. Distinguished. A crew that retains all 200 points available points for Table VIII, receives a “GO” rating on the emergency procedure, with all crewmember passing written tests. Applies only to Table VIII ORE.

2-15. Waivers.

a. The appropriate certification authority is also the authority to grant waivers to the certification requirements stated in this document. To request a waiver, the unit commander will sign and submit a memorandum through the appropriate chain of command to the certification authority. All requests should clearly state the specific issue which requires a waiver, the rationale and impact to the unit if not granted.

b. The Commander, 100th MD BDE may grant the following waivers.

(1) Rank requirements for any Soldier below the rank specified in paragraphs 1-6 and 1-8.

(2) Rank requirements for Warrant Officers to serve in either RO/CO or COO/SO.

(3) Exception to the number of crews required for operations based on personnel shortages.

During normal operations, five crews consisting of five certified crewmembers are required for continuous operations and may only be waived by the CG.

Chapter 3

GMD Gunnery Tables

The purpose of this chapter is to provide details on the three levels of the gunnery program as well as the tables associated with each.

SECTION I – GUNNERY BASICS

OVERVIEW

3-1. GMD gunnery tables are used in conjunction with GMD Battle Management Levels (GMDBML) to ensure comprehensive crewmember and crew training is conducted in a logical progression. Gunnery tables provide an overall context and describe the tasks to train, whereas GMDBMLs focus on the TTPs and scenario utilization. Table 3-1 shows a summary of the gunnery tasks.

Table 3-1. Gunnery Table Skills

Level	***Table***	***Task***
Basic	I	System Skills / Day-to-Day
(Individual)	II	Crisis, Combat, & Recovery (Individual / Positional)
	III	Positional Evaluation Combat Operations
	IV	Positional Certification Combat Operations
Intermediate	V	Emergency Action Procedures
(Collective)	VI	Crisis, Combat, & Recovery
	VII	Crew Evaluation Crisis, Combat, & Recovery
	VIII	Crew Certification Crisis, Combat, & Recovery
Advanced	IX	Workstation Loss Procedures
(Collective)	X	Crisis, Combat, & Recovery (Degraded Environment)
	XI	Crew Evaluation Crisis, Combat, & Recovery (Degraded Environment)
	XII	Crew Certification Crisis, Combat, & Recovery (Degraded Environment)

BASIC GUNNERY TABLES

3-2. Basic gunnery tables train individual Soldiers to perform as crewmembers. The basic gunnery tables prepare crewmembers on positional tasks in day-to-day, crisis, combat, and recovery operations as well as determine their knowledge level of the GMD fire control (and supporting sub-systems) TTPs. Basic gunnery tables include tables I through IV. Performing tables I through IV is mandatory for all crewmembers. The following standards apply when training and performing tables I through IV:

a. All training will be conducted by a Soldier certified in the trainee's assigned position, a DEP/BA, or a Crew Director. All tables will be evaluated and critiqued upon completion of the training event.

b. An AAR will be conducted with the trainee after each training event. The AAR will include a review of strengths and weaknesses, discussion of errors and an analysis of overall performance. Tasks in which errors are committed will be retrained until the trainee can perform the task without errors. The trainer will annotate successfully completed training in the individual's ITR before progressing to the next task. An individual's ITR is an inspectable item.

c. Tasks will be trained sequentially in accordance with the gunnery tables and GMDBMLs. Only when all tasks are performed to standard for a given table will the trainee progress to the next table.

d. Some tasks are listed for both table I and table II. These tasks have a day-to-day component (table I) as well as application in crisis, combat, and recovery (table II). Trainers will focus the appropriate activities to achieve training the overall goal of the table being trained.

3-3. Table III.

a. Table IIIs will be administered by the same level headquarters ORE team or equivalent. Table III scenario runs will be evaluated by designated personnel (BDE ORE team members for MDE crews and System Evaluators/Integrator for FDC crews) using the appropriate scorecard for the trainee's position. Maintain the scorecard in the trainee's ITR. Any errors noted will be to the trainee retrained for correction. Failure to score the requisite 90 points or higher on the table III will result in retraining the tasks. When retraining is completed and annotated in the trainee's ITR, another table III another attempt will be made.

b. The gunnery table III evaluator will provide the Soldier 10 questions to determine their level of required knowledge in advance of table IV written testing. The topics will come from the trainee's positional study guide. The trainee may look up the answer if they have not committed the topic to memory. Failure to achieve a 90% score will result in the trainee reviewing the source documents and l annotating the review in the trainee's ITR.

c. Trainees will not progress to table IV until table III is complete and annotated in the trainee's ITR by the evaluator.

3-4. Table IV.

a. The table IV will be administered by the next higher headquarters ORE team. The completion of Tables I through III will be verified in the trainee's ITR prior to the evaluation. Failure to produce training records can result in the postponement of the evaluation.

b. Gunnery table IV evaluation is an individual effort and consists of a written evaluation to assess Soldier knowledge and a hands-on positional evaluation. Additional hands-on scenario runs are provided to the crew DIR and DEP/BA on leader oversight tasks to assess their ability to conduct and complete those tasks.

c. The written test will consist of multiple choice, matching and fill-in-the-blank questions intended to test the Soldiers system knowledge and application of that knowledge. True/false questions do not test system knowledge or application and will not be used.

d. The positional evaluation will consist of a "Nominal" scenario (both OE nodes participating) and "Failover" scenario (single node; to include center devolution tasks).

e. Single node evaluations are authorized for positional certifications when only one OE is available due to software upgrades or operational configuration constraints. Positional evaluations may consist of two "Failover" scenarios (versus one "Nominal" and one "Failover").

f. A Soldier must score a minimum of 90% on the written exam and a minimum of 90 points on each positional evaluation scenario in order to pass a table IV. The ORE team will make certification recommendations to the certifying authority based on table IV results.

g. Crewmembers who have completed table IV certification and are assigned to a battle-rostered crew will focus on gaining and maintaining proficiency with their battle-rostered crew at the intermediate gunnery level. Battle-rostered crewmembers will conduct table IV as directed in paragraph 2-9.

INTERMEDIATE GUNNERY TABLES

3-5. Intermediate gunnery tables train battle-rostered crews to operate collectively in day-to-day, crisis, combat, and recovery environments. Intermediate gunnery tables include tables V through VIII and apply to battle-rostered crews only. The following standards apply when training and performing tables V through VIII:

a. All training will be conducted by the crew DIR or qualified designee.

b. An AAR will be conducted by the entire crew after each training event. The AAR will include a review of strengths and weaknesses, discussion of errors and an analysis of overall performance. Tasks in which errors are committed will be retrained until the crew can perform the task to standard with no errors. The trainer will annotate successfully completed training in the crew NCOIC's leader book before progressing to the next task. The crew NCOIC's leader book is an inspectable item.

c. Tasks will be trained sequentially in accordance with the gunnery tables and GMDBMLs. Only when all tasks are performed to standard for a given table may the crew progress to the next table.

3-6. Table VII.

a. Table VII will be administered by the same level headquarters ORE team or equivalent, but will be conducted by personnel external to the crew (BDE ORE Team for MDE crews and System Integrators for FDC crews) using the appropriate scorecard for the crew. Maintain the scorecard in the NCOIC's leader book. Any errors noted will be briefed to the individual, crew, and/or trainer for correction. Failure to collectively score the requisite 90 points or higher on the table VII will result in retraining of the tasks with errors. When retraining is complete and annotated in the NCOIC's leader book, another table VII attempt will be made.

b. The gunnery table evaluator will ask primary crewmembers between 10-15 questions to determine their level of required knowledge in advance of written testing. Written testing will remain an individual trainee's responsibility. The topics will come from the trainee's position study guide. The trainee may look up the answer if they have not committed the topic to memory. Failure to answer 90% correct will result in the trainee reviewing the questions, source document material, and annotate the review completion in the trainee's ITR.

c. Additionally, crews will be scored on their ability to properly react to emergency procedures.

d. Crews will not progress to table VIII until table VII is complete and annotated in the crew training records by the evaluator.

3-7. Table VIII.

a. Table VIII will be administered by the next higher headquarters ORE team. The completion of tables V through VII must be verified in the NCOIC's leader book before the evaluation will begin. Failure to produce the training records may result in a postponed evaluation.

b. Gunnery table VIII is a collective assessment with both individual and collective efforts. Table VIII consists of a Nominal scenario (both OE nodes participating) and a Failover scenario (single node; to include center devolution tasks). Single node evaluations are authorized for crew certifications when only one OE is available due to software upgrades or operational configuration constraints.

c. Additionally, crews will be scored on their ability to properly react to emergency procedures.

d. The crew must maintain 90 points during each evaluation scenario in order to become table VIII certified. The ORE team will make certification recommendations to the certifying authority based on the table VIII results.

e. Crews will not progress to advanced gunnery tables until the crew has successfully completed table VIII.

ADVANCED GUNNERY TABLES

3-8. Advanced gunnery tables train crews to operate collectively in day-to-day, crisis, combat, and recovery in degraded environments. Advanced gunnery tables include tables IX through XII and only apply to battle-rostered crews. The following standards apply when training and performing tables IX through XII:

a. The Crew DIR or delegate conducts all training. Evaluate and critique all tables upon completion of the training event utilizing the AAR process.

b. Trainers and Evaluators will conduct an AAR with the entire crew after each training event. The AAR will include a review of strengths and weaknesses, discussion of errors and an analysis of overall performance. Retrain tasks in which errors are committed until the crew can perform the task to standard with no errors. The trainer will annotate successfully completed training in the crew NCOIC's leader book before progressing to the next task. The crew NCOIC's leader book is an inspectable item.

c. Train tasks sequentially in accordance with the gunnery tables and GMDBMLs. Upon completion of the table standards, the crew may proceed to the next table.

3-9. Table XI.

a. Gunnery table XI will be administered by the same level headquarters ORE team or equivalent, but will be conducted by individuals external to the crew (BDE ORE Team for MDE crews and BN ORE Team for FDC crews) using the appropriate scorecard for the crew. Maintain the scorecard in the NCOIC's leader book. Brief any errors noted to the individual, crew, and/or trainer for correction. Failure to collectively score the requisite 90 points or higher on the table XI will result in retraining of the tasks with errors. Attempt another table XI after retraining is completed and annotated in the NCOIC's leader book.

b. Additionally, score crews on their ability to react to GMD fire control workstation loss and Emergency Procedures in conjunction with two Failover scenarios during table XI.

c. Crews will not progress to table XII until the crew has successfully completed table XI.

3-10. Table XII.

a. The next higher headquarters ORE team administers Table XII. Evaluators will verify Table IX through XI completion in the NCOIC's leader book before the evaluation will commence. Failure to produce training records will result in a postponed evaluation.

b. Gunnery table XII is a collective assessment with both individual and collective efforts. Table XII consists of a challenging Failover scenario (single node; to include center devolution tasks) in conjunction with GMD fire control workstation loss or losses and Emergency Procedures. Single node evaluation is authorized for crew certifications

c. The crew must maintain 90 points during each evaluation scenario and receive a “GO” on the Emergency Procedure in order to become table XII certified. The ORE team will make certification recommendations to the certifying authority based on evaluation results.

d. Note: The complexity of Table XII is far beyond what crews should expect to see during normal Crisis, Combat, and Recovery Operations, failure of a Table XII evaluation should not cause an evaluator to recommend decertification of an operational crew.

Table 3-2. Gunnery Table Frequency

Table	*Task*	*Target*	*Method*	*Frequency*
I	System Skills / Day-to-Day	Individual	Hands-on	1 scenarios/shift
II	Crisis, Combat, & Recovery (Individual / Positional)	Individual	Hands-on	1 scenarios/shift
III	Positional Evaluation	Individual	Practical Exercise	Prior to ORE / as required
IV	Positional Certification	Individual	Written Exam and ORE	Initially within 45 days after GMD Operator Course
V	Emergency Procedures	Crew	Hands-on	2 scenarios/30 days
VI	Crisis, Combat, & Recovery (Crew Collective)	Crew	Hands-on	1 scenarios/shift
VII	Crew Evaluation	Crew	Practical Exercise	Prior to ORE / as required
VIII	Crew Certification	Crew	ORE	Semiannually, not to exceed 180 days (Battle-Rostered Crewmembers) As required due to crew integrity
IX	Workstation Loss or losses Procedures	Crew	Hands-on	As directed
X	Crisis, Combat, & Recovery (Degraded Environment)	Crew	Hands-on	As directed
XI	Crew Evaluation	Crew	Practical Exercise	As directed
XII	Crew Certification	Crew	ORE	As directed

GMD: Ground-based Midcourse Defense ORE: Operational Readiness Evaluation

SECTION II – FDC & MDE GUNNERY TABLE DESCRIPTIONS

TABLE I

3-11. Used to train the crewmember on the fundamentals of the GMD system, GMD fire control operations, and positional tasks. Table I consists of day-to-day, crisis, combat, and recovery activities required to conduct active defense operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform day-to-day tasks required to staff an operational GMD fire control node in conjunction with GMDBML Level I. The Individual has met the standard when the individual successfully receives a “GO” on all subtasks listed below and GMDBML Level I. Not all triggers for operator tasks may occur during hands-on training (i.e. alarms) and the trainer must conduct training utilizing a supporting baseline document.

d. **Subtasks**:

(1) DTMS GMD – Common Operator Individual Tasks.

- 129-IT3-1002 Recommend Courses of Action During Ground-based Midcourse Defense (GMD) Operations
- 129-IT3-1006 Evaluate Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Global Settings
- 129-IT3-1007 Evaluate Management By Exception ("MBE") Actions
- 129-IT3-1008 Evaluate Ground-based Midcourse Defense (GMD) Resource Behavior
- 129-IT3-1009 Evaluate Ground-based Midcourse Defense (GMD) Engagement Behavior
- 129-IT3-1010 Determine Ground Based Interceptor (GBI) Allocation
- 129-IT3-1012 Determine Probability of Integrated Task Success (PITS)
- 129-IT3-1028 Analyze Cluster Behavior
- 129-IT3-1030 Communicate Using an Integrated Services Telephone Version 2 (IST-2)
- 129-IT3-1031 Operate a Secure Voice and Data Secure Telephone Unit (STU) III/SECTEL/STE

(2) Collective Tasks (Positional Responsibilities within Collective Task).

- 40-5-1000/2000 Prepare for Ground-based Midcourse Defense (GMD) (MDE)/(FDC).
- 40-5-1001/2001 Perform Ground-based Midcourse Defense (GMD) Asset Management (MDE)/(FDC).

(3) Crew Position (A): Communication Operator / Readiness Officer Individual Tasks.

- 129-IT3-2003 Conduct Readiness Condition (REDCON) Change
- 129-IT3-2004 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm [Function] Devolution
- 129-IT3-2005 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: Authority Change
- 129-IT3-2007 React to Ground-based Midcourse Defense Fire Control Alarm: Center Devolution
- 129-IT3-2010 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: [Data Type] Reread
- 129-IT3-2011 React to Ground-based Midcourse Defense (GMD) Fire Control (GFC) Alarm: 'Takeover [Function]'

- 129-IT3-2012 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: [Directive] Achievement Timeout
- 129-IT3-2013 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: [Directive] Attainment Failure
- 129-IT3-2016 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: [GBI Type] Initial Inventory (Increase/Decrease)
- 129-IT3-2017 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: [Ground-Based Interceptor Type] Not Mission Capable (NMC) Inventory (Increase/Decrease)
- 129-IT3-2018 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Health and Status"
- 129-IT3-2019 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) Degraded Operations Change
- 129-IT3-2024 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Operations Capability (OPSCAP)"
- 129-IT3-2030 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: Token Handover/Takeover
- 129-IT3-2031 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Token Session Outage"
- 129-IT3-2038 Change In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) Operating Mode
- 129-IT3-2039 Conduct Asset Management
- 129-IT3-2040 Conduct Asset Recap for GFC Operations
- 129-IT3-2041 Conduct Crypto Key Directive Change
- 129-IT3-2042 Conduct Directive Change: Data Reset
- 129-IT3-2043 Conduct Directive Change: Devolution
- 129-IT3-2044 Conduct In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) Initialization
- 129-IT3-2045 Conduct Directive Change: Purge Resource
- 129-IT3-2046 Conduct Request Status Action
- 129-IT3-2047 Conduct Directive Change: Request Interval Determination (RID)
- 129-IT3-2048 Conduct Directive Change: Rules Of Engagement (ROE)
- 129-IT3-2049 Conduct Directive Change: System State
- 129-IT3-2050 Conduct Directive Change: Token
- 129-IT3-2052 Conduct Operations Capability (OPSCAP) Change
- 129-IT3-2053 React to Ground-based Midcourse Defense (GMD) Fire Control (GFC) Alarm: Weapons Control Directive Cannot Comply (CANTCO)
- 129-IT3-2055 React to Ground-based Midcourse Defense (GMD) Fire Control (GFC) Alarm: [Data] Update Not Attained
- 129-IT3-2056 Conduct Missile Field Evacuation Conference (Fire Direction Center)

(4) DTMS GMD – FOO / WO Individual Tasks.

- 129-IT3-3010 Conduct Defended Area Change
- 129-IT3-3011 Conduct Defense Validation Changes
- 129-IT3-3012 Conduct Defense Strategy/Execution Plan ("DS/XP") Directive Change
- 129-IT3-3016 Conduct Mission Constraints Directive Change

- 129-IT3-3017 Conduct Strategic Missile Launch Period of Interest (POI) Briefing
- 129-IT3-3018 Conduct Directive Change: Reserve
- 129-IT3-3023 Update Defended Asset Database
- 129-IT3-3024 Update Missile Order of Battle Database (MOB)
- 129-IT3-3026 Change the 'Release' Mission Directive in the Ground-based Midcourse Defense (GMD) Fire Control (GFC) System

(5) DTMS GMD – COO/SO Individual Tasks.

- 129-IT3-4003 Conduct Sensor Recap
- 129-IT3-4004 Assess Common Operational Picture between GFC Data and C2BMC
- 129-IT3-4007 Enter Operations Capability (OPSCAP) as a Current Operations
- Officer (COO)/Sensors Operator (SO)
- 129-IT3-4008 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: Health and Status (H&S) Change for Supporting Sensors
- 129-IT3-4013 Verify Sensor Mission Profiles

(6) DTMS GMD – DEP/BA Individual Tasks.

- 129-IT3-5001 Assess Crew Performance
- 129-IT3-5005 Compare Common Operational Pictures Between Ground-based Midcourse Defense (GMD) Fire Control (GFC) Nodes
- 129-IT3-3011 Conduct Defense Validation Changes

(7) DTMS GMD – MDE DIR/FDC DIR Individual Tasks.

- 129-IT3-3011 Conduct Defense Validation Changes
- 129-IT3-6001 Manage Readiness Condition (REDCON) Change
- 129-IT3-6002 Manage Ground-based Midcourse Defense (GMD) Link
- 129-IT3-6003 Report Essential Elements of Information (EEIs) to the Missile Defense Officer (MDO)
- 129-IT3-6005 Manage Request Interval Determination (RID) Directive
- 129-IT3-6006 Manage Data Reset Directive Change
- 129-IT3-6007 Manage Defended Area Directive Change
- 129-IT3-6008 Manage Devolution Directive Change
- 129-IT3-6009 Manage Defense Strategy/Execution Plan ("DS/XP") Directive Change
- 129-IT3-6015 Manage In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) Initialization
- 129-IT3-6016 Manage Mission Constraints Directive Change
- 129-IT3-6018 Manage Purge Resource Directive Change
- 129-IT3-6019 Manage Reserve Directive Change
- 129-IT3-6020 Manage Rules of Engagement ("ROE") Directive Change
- 129-IT3-6021 Manage System State Directive Change
- 129-IT3-6023 Manage Token Directive Change
- 129-IT3-6024 Manage Defense Validation
- 129-IT3-6028 Process Ground-based Midcourse Defense Fire Control (GFC) Alarm: Center Devolution
- 129-IT3-6031 Manage Crypto Key Directive Change

(8) GMD Fire Control Graphical User Interface (GUI) Design Document: Operators familiarize themselves with the GUI Design Document material assigned in Positional Study Guide.

(9) GMD Fire Control Software Design Description and Appendices: Operators familiarize themselves with the Software Design Description and Appendices assigned in Positional Study Guide.

(10) 100th MD BDE TSOP Annex S (Engagement Procedures).
  (a) Operators familiarize themselves with content of Annex S.
  (b) Operator assignments specified in the GMDBML chapter should committed to memory by assigned Operators.

(11) 100th MD BDE TSOP: Operators familiarize themselves with content of 100th MD BDE TSOP.

Note: Trainer will sign off on successful task completion in the individual's ITR and enter the results in DTMS for Table I subtasks and GMDBML Level 1.

TABLE II

3-12. This table trains the crewmember on the fundamentals of the GMD system, GMD fire control operations, and positional tasks. Table II consists of day-to-day, crisis, combat, and recovery activities required to conduct active defense operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to conduct active defense operations in conjunction with GMDBML Levels II-IV. Standard is met when individual has successfully received a "GO" on all subtasks listed below and GMDBML Levels I–-IV. Note: Not all triggers for operator tasks may occur during hands-on training (i.e. alarms) and the trainer must conduct training utilizing a supporting baseline document.

d. **Subtasks**:
  (1) DTMS GMD – Common Operator Individual Tasks.
    - 129-IT3-1002 Recommend Courses of Action During Ground-based Midcourse Defense (GMD) Operations
    - 129-IT3-1006 Evaluate Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Global Settings
    - 129-IT3-1007 Evaluate Management By Exception ("MBE") Actions
    - 129-IT3-1008 Evaluate Ground-based Midcourse Defense (GMD) Resource Behavior
    - 129-IT3-1009 Evaluate Ground-based Midcourse Defense (GMD) Engagement Behavior
    - 129-IT3-1010 Determine Ground Based Interceptor (GBI) Allocation
    - 129-IT3-1012 Determine Probability of Integrated Task Success (PITS)

- 129-IT3-1028 Analyze Cluster Behavior
- 129-IT3-1030 Communicate Using an Integrated Services Telephone Version 2 (IST-2)
- 441-096-1188 Operate a Secure Voice and Data Secure Telephone Unit (STU) III/SECTEL/STE

(2) DTMS GMD – Collective Tasks (Positional Responsibilities within Collective Task).

- 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC)

(3) DTMS GMD – RO / CO Individual Tasks.

- 129-IT3-2006 React to Ground-based Midcourse Defense (GMD) Fire Control Alarm: "Communication Event 2 ("CE2") In-Flight Target Update ("IFTU") Timeout"
- 129-IT3-2008 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Communications Task Plan ("CTP") Cannot Comply
- ("CANTCO")"
- 129-IT3-2009 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: Communication Task Plan (CTP) Response Timeout
- 129-IT3-2014 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm Defense Task Plan (DTP) Terminate Not Confirmed Alarm
- 129-IT3-2015 React to Ground-Based Midcourse Defense Fire Control (GFC) Alarm: Flyout Curve Parameter Mismatch
- 129-IT3-2020 React to Ground-based Midcourse Defense (GMD) Fire Control Alarm: "In-Flight Status Report ("IFSR") Not Received"
- 129-IT3-2021 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "In Flight Target Update ("IFTU") Failure"
- 129-IT3-2022 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: Kill Vehicle (KV) Not Operational
- 129-IT3-2023 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Launch Failure"
- 129-IT3-2025 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: Sensor Task Plan (STP) Cannot Comply (CANTCO)
- 129-IT3-2026 React to Ground-based Midcourse Defense Fire Control (GFC) Alarm: Sensor Task Plan (STP) Response Time Out
- 129-IT3-2027 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: System State Alert Auto
- 129-IT3-2028 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: System State Cannot Comply (CANTCO)
- 129-IT3-2029 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: System State Response Timeout
- 129-IT3-2032 React to Ground-based Midcourse Defense (GMD) Fire Control Alarm: "Weapons Task Plan ("WTP") Cancellation Failure"
- 129-IT3-2033 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Weapons Task Plan ("WTP") Cancellation Response Timeout"
- 129-IT3-2034 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Weapons Task Plan ("WTP") Cannot Comply ("CANTCO")"
- 129-IT3-2035 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Weapons Task Plan (WTP) Response Timeout"

- 129-IT3-2036 Assess Ground Based Interceptor (GBI) Performance
- 129-IT3-2037 Calculate Point to Point Distance for Threat Determination
- 129-IT3-2051 Determine Cluster Extent
- 129-IT3-2054 Determine Ground-Based Interceptor (GBI) First Stage Debris Location
- 129-802-0020 Process Weapons Posture Changes

(4) DTMS GMD – FOO / WO Individual Tasks.

- 129-IT3-3001 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Leaker"
- 129-IT3-3002 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: Missile Event - No Quick Alert
- 129-IT3-3003 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: "Mission Performance Failure"
- 129-IT3-3004 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: Orphan Track
- 129-IT3-3005 React to Ground-based Midcourse Defense (GMD) Fire Control ("GFC") Alarm: Quick Alert
- 129-IT3-3006 React to Ground-based Midcourse Defense Fire Control Alarm: Weapons Control Cannot Comply (CANTCO)
- 129-IT3-3007 React to Ground-based Midcourse Defense (GMD) Fire Control (GFC) Alarm: Weapons Control Response Timeout
- 129-IT3-3008 React to Ground-based Midcourse Defense (GMD) Fire Control (GFC) Alarm: Weapons Not Free
- 129-IT3-3009 Assess Ground Based Interceptor (GBI) Allocation Timeline for Decision Point 1 (DP1)
- 129-IT3-3013 Conduct Fire Control Order "Cease Fire"
- 129-IT3-3014 Conduct Fire Control Order "Clear Management By Exception (MBE)"
- 129-IT3-3015 Conduct Fire Control Order: "Engage"
- 129-IT3-3019 Conduct "Terminate Engagement" Action
- 129-IT3-3020 Conduct War Gaming
- 129-IT3-3021 Conduct Weapons Control Directive Change
- 129-IT3-3022 React to Ballistic Missile Fan
- 129-IT3-3025 Conduct Fire Control Order Hold Fire
- 129-IT3-3027 Implement Fire Control Order 'Phased Release' Using the Ground-based Midcourse Defense (GMD) Fire Control (GFC) System

(5) DTMS GMD – COO/SO Individual Tasks.

- 129-IT3-4001 Assess Defended Asset Values
- 129-IT3-4002 Conduct Sensor Management Operations
- 129-IT3-4005 Assess the Common Operational Picture (COP) between the Ground-based Midcourse Defense Fire Control (GFC) and Supporting Sensors
- 129-IT3-4006 Assess Common Operational Picture (COP) between Integrated Tactical Warning/Attack Assessment (ITW/AA) and Ground-based Midcourse Defense Fire Control (GFC)
- 129-IT3-4010 Report Ground-based Midcourse Defense (GMD) Activity to Supporting Sensors
- 129-IT3-4011 Report Sensor Tracking

- 129-IT3-4012 Determine Ground Based Interceptor (GBI) 3rd Stage Debris Location
- 129-IT3-4014 Provide Manual Search Fence Parameters to the Sea-Based X-band (SBX) Radar

(6) DTMS GMD – DEP/BA Individual Tasks.

- 129-IT3-3011 Conduct Defense Validation Changes
- 129-IT3-5001 Assess Crew Performance
- 129-IT3-5002 Assess Ground Based Interceptor (GBI) Allocation Timeline for Decision Point 2 (DP 2)
- 129-IT3-5003 Co-Authorize Weapons Control
- 129-IT3-5004 Conduct Cluster Analysis
- 129-IT3-5006 Manage Defense Network (DEFNET)
- 129-IT3-5007 Perform War Gaming of the Ground-based Midcourse Defense (GMD) Battle
- 129-IT3-5008 Perform Weapons Posture Changes
- 129-IT3-5009 Report Weapons Posture Changes to Vandenberg Air Force Base (VAFB)

NOTE: Deputies and BAs will be proficient in performing tasks they are required to assess performance of other operators.

(7) DTMS GMD – MDE DIR/FDC DIR.

- 129-IT3-3011 Conduct Defense Validation Changes
- 129-IT3-6004 Evaluate Lead Object
- 129-IT3-6010 Manage Fire Control Order (FCO) 'Cease Fire'
- 129-IT3-6011 Manage Fire Control Order (FCO): 'Clear Management By Exception (MBE)'
- 129-IT3-6012 Manage Fire Control Order 'Engage'
- 129-IT3-6013 Manage Ground-Based Interceptor (GBI) Replacement
- 129-IT3-6014 Manage Fire Control Order (FCO) 'Hold Fire'
- 129-IT3-6017 Manage Point-to-Point Distance Calculation
- 129-IT3-6022 Manage 'Terminate Engagement' Action
- 129-IT3-6025 Manage War Gaming
- 129-IT3-6026 Manage Weapons Control Authorization
- 129-IT3-6027 Manage Weapons Posture Change
- 129-IT3-6029 Process Ground-based Midcourse Defense Fire Control (GFC) Alarm: System State Alert Auto
- 129-IT3-6030 Process Ground-based Midcourse Defense Fire Control (GFC) Alarm: Weapons Task Plan (WTP) Cancellation Failure
- 129-IT3-6032 Conduct Weapons Posture Transition (Fire Direction Center)
- 129-IT3-6033 Issue a Fire Control Order to a Ground-based Midcourse Defense (GMD) Crewmember

NOTE: Directors will be proficient in performing tasks they are required to manage.

(8) Operators will continue to learn and apply information contained in TSOP Annexes, GUI Design Document, and Software Design Description.

Note: Trainer will sign off on successful task completion in the individual's ITR and enter the results in DTMS for table II subtasks and GMDBML Levels II– IV.

TABLE III

3-13. Table III assesses the crewmember on the fundamentals of the GMD system, GMD fire control operations, and positional tasks. Table III consists of day-to-day, crisis, combat, and recovery activities required to staff an operational node and conduct active defense operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks during Crisis, Combat and Recovery Operations.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and crew personnel.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to staff an operational GMD fire control node and conduct active defense operations in conjunction with GMDBML Level IV. After validation of successful completion of tables I and II in the individual's ITR, standard is met if the individual scores 90 points or higher on each scenario as well as 90% or higher on the written evaluation.

d. **Subtasks**:
   (1) Demonstrate system and application knowledge to the evaluator: The Evaluator will give the individual a 10 question written test derived from their positional study guide. The individual must answer 9/10 (90% correctly), provided with all supporting documentation, and completed within 25 minutes.
   (2) Conduct Positional Crisis, Combat, and Recovery Operations Tasks as a part of a Crew (Nominal): The evaluator will score the individuals performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this scenario.
   (3) Conduct Positional Crisis, Combat, and Recovery Operations Tasks as a part of a Crew (Failover): The evaluator will score the individuals performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this scenario.
   (4) Note: for positional certifications, when only one OE is available due to software upgrades or operational configuration constraints a single node evaluation is authorized. Positional evaluation may consist of two "Failover" scenarios (versus one "Nominal" and one "Failover").
   (5) Outbrief / AAR: Evaluator will provide copies of the scorecards and written test results to the individual to reflect either the successful completion or the attempt of table III. The individual will post the scorecards and written test results in their ITRs and enter the results in DTMS to annotate the successful completion or attempt of table III.
   (6) Evaluator will notify the certification authority if the individual is prepared to undergo table IV certification attempt.

TABLE IV

3-14. Table IV assesses the crewmember on the fundamentals of the GMD system, GMD fire control operations, and positional tasks. Table IV consists of day-to-day, crisis, combat, and recovery activities required to staff an operational node and conduct active defense operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks during Crisis, Combat and Recovery Operations.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and crew personnel.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to staff an operational GMD fire control node and conduct active defense operations in conjunction with GMDBML Level IV. GMD fire control system outages should consist of one to two (1-2) subsystem outages per evaluated position. After validation of successful completion of tables I - III in the individual's ITR and DTMS, standard is met if the individual scores 90 points or higher on each scenario as well as 90% or higher on the written test.

d. **Subtasks**:
   (1) Demonstrate system and application knowledge to the evaluator: The Evaluator will give the individual a written test derived from their positional study guide. The written test will consist of True/False, multiple choice, and fill-in-the-blank questions intended to test the operator's system and application knowledge. The individual must answer 90% correctly, provided with all supporting documentation, and completed within 120 minutes.
   (2) Conduct Positional Crisis, Combat, and Recovery Operations Tasks as a part of a Crew (Nominal): The evaluator will score the individuals performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this scenario.
   (3) Conduct Positional Crisis, Combat, and Recovery Operations Tasks as a part of a Crew (Failover): The evaluator will score the individuals performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this scenario.
   (4) Note: for positional certifications, when only one OE is available due to software upgrades or operational configuration constraints a single node evaluation is authorized. Positional evaluation may consist of two "Failover" scenarios (versus one "Nominal" and one "Failover").
   (5) Out-brief / AAR: The Evaluator will provide copies of the scorecards and written test results to the individual to review either the successful completion or the attempt of table IV. The individual will post the scorecards and written test results in their ITRs and DTMS to annotate the successful completion or attempt of Table IV.
   (6) The Evaluator will notify the certification authority for the recommendation for the individual's positional certification or discuss requirements with trainer prior to another certification attempt.

TABLE V

3-15. Used to train the crew on reacting to emergency conditions. Table V consists of preparing a crew to respond to an emergency condition triggered during day-to-day operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks given an emergency scenario.

b. **Conditions:** Given a GMD fire control training environment in dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform tasks required to staff an operational GMD fire control node and respond to an emergency scenario by successfully completing the subtasks below in conjunction with GMDBML Level V.

d. **Subtasks**: DTMS GMD Collective Tasks 40-5-1003/2003 Perform Emergency Actions (MDE)/(FDC).

Note: Trainer will sign off on successful task completion in their Leader Book and enter the results in DTMS for table V subtasks and GMDBML Level V.

TABLE VI

3-16. Used to train the crew to operate in a more intense environment. Table VI consists of preparing the crew to conduct more intensive crisis and combat operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to conduct active defense operations in conjunction with GMDBML Levels VI and VII. GMD fire control system outages should consist of one to two (1-2) subsystem outages per position. The collective crew has met the standard when the crew has successfully received a “GO” on all subtasks listed below and GMDBML Level VI.

d. **Subtasks**: DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC).

Note: Trainer will sign off on successful task completion in their Leader Book and enter the results in DTMS for table VI subtasks and GMDBML Levels VI and VII.

TABLE VII

3-17. Used to assess the crew’s ability to conduct operations in a more intense environment. Table VII consists of day-to-day, crisis, combat, and recovery activities required to staff an operational node and conduct active defense operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to staff an operational GMD fire control node and conduct active defense operations in conjunction with GMDBML Level VIII. GMD fire control system outages should consist of three to four (3-4) subsystem outages total. Volume of threats should induce Low Missile Procedures. After validation of successful completion of tables V and VI in the individual’s ITR, the individual has met the standard if the individual scores 90 points on higher on each scenario as well as knowledge check (if required).

d. **Subtasks**:
   (1) Demonstrate system and application knowledge to the evaluator.

(a) The evaluator will give the individual a 10 question written test derived from their positional study guide. The individual must answer 9/10 (90% correctly), provided all supporting documentation, and completed within 25 minutes.
(b) NOTE: This applies only to certified battle-rostered crewmembers not requiring a table IV certification.

(2) DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC).
(a) The evaluator will score the crew's performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this "nominal" scenario.
(b) The evaluator will score the crew's performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this "failover" scenario.

(3) The evaluator will present an emergency scenario from the list below.
(a) DTMS GMD Collective Tasks 40-5-1003/2003 Perform Emergency Actions (MDE)/(FDC).
1. React to a bomb threat.
2. React to a fire.
3. React to a medical emergency.
4. React to a natural disaster or severe/inclement weather.
5. React to a duress situation.
6. Perform total evacuation.
(b) The evaluator will score the crew as either "GO" or "NO-GO" based on performance of steps responding to an emergency.

(4) Outbrief / AAR. Evaluator will provide copies of the scorecards and written test results to the individual to reflect either the successful completion or the attempt of table VII. The trainer will post the scorecards and written test results in their leader books to annotate the successful completion or attempt of table VII.

(5) Evaluator will notify the unit S-3 if the crew is prepared to undergo table VIII.

Note: Trainer will sign off on successful task completion in their Leader Book and enter the results in DTMS for table VII subtasks and GMDBML Levels VII and VIII.

TABLE VIII

3-18. Table VIII assesses the crew's ability to conduct operations in a more intense environment. Table VIII consists of day-to-day, crisis, combat, and recovery activities required to staff an operational node and conduct active defense operations. Table VIII is an External Evaluation (EXEVAL).

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in either single or dual node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to staff an operational GMD fire control node and conduct active defense operations in conjunction with GMDBML Level VIII. GMD fire control system outages should consist of three to four (3-4) subsystem outages total. Volume of threats should induce Low Missile

Procedures. After validation of successful completion of tables VII in the trainer's leader book, the individual has met the standard if the individual scores 90 points or higher on each scenario as well as knowledge check (if required).

d. **Subtasks:**

(1) Demonstrate system and application knowledge to the evaluator: The evaluator will give will give the individual (if required) a written test derived from their positional study guide. The individual must answer 90% correctly, provided all supporting documentation, and completed within 120 minutes.

NOTE: This applies only to certified battle-rostered crewmembers not requiring a table IV certification.

(2) DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC).

(a) The evaluator will score the crew's performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this "nominal" scenario.

(b) The evaluator will score the crew's performance using the applicable positional scorecard. The individual must score a minimum of 90 points on this "failover" scenario.

(3) Outbrief / AAR. Evaluator will provide copies of the scorecards and written test results to the crew trainer to reflect either the successful completion or the attempt of table VIII. The trainer will post the scorecards and written test results in their leader books and enter them into DTMS to annotate the successful completion or attempt of table VIII.

(4) Evaluator will notify the certification authority of the recommendation for table VIII certification of the evaluated crew or discuss requirements with trainer prior to another certification attempt.

TABLE IX

3-19. Table IX trains the crew to operate in a more intense environment while in a degraded state. Table IX consists of preparing the crew to conduct more intensive crisis and combat operations when, due to GMD fire control workstation outages crewmembers are displaced.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in single node configuration, three or more available GMD fire control workstations, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to conduct active defense operations in conjunction with GMDBML Level IX. GMD fire control system outages should consist of three to four (3-4) subsystem outages total. Volume of threats should induce Low Missile Procedures. The collective crew has successfully met the standard when they have received a "GO" on all subtasks listed below and GMDBML Level IX.

d. **Subtask**: DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD)(MDE)/(FDC).

Note: Trainer will sign off on successful task completion in their Leader Book and enter the results in DTMS for table IX subtasks and GMDBML Level IX.

TABLE X

3-20. Table X trains the crew on reacting to emergency conditions during active defense operations. Table X consists of preparing a crew to respond to an emergency condition triggered during crisis or combat operations.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks given an emergency scenario.

b. **Conditions:** Given a GMD fire control training environment in a single node configuration, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform tasks required to staff an operational GMD fire control node and respond to an emergency scenario by successfully completing the subtasks below in conjunction with GMDBML Level IX-X.

d. **Subtasks**:

(1) DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC).

(2) GMD Collective Tasks 40-5-1003/2003 Perform Emergency Actions (MDE)/(FDC).

1. React to a bomb threat.
2. React to a fire.
3. React to a medical emergency.
4. React to a natural disaster or severe/inclement weather.
5. React to a duress situation.
6. Perform total evacuation.

Note: Trainer will sign off on successful task completion in their Leader Book and enter the results in DTMS for table X subtasks and GMDBML Level X.

TABLE XI

3-21. Table XI assesses the crew's ability to conduct operations in a more intense environment while in a degraded state and under emergency conditions. Table XI consists of day-to-day, crisis, combat, and recovery activities required to staff an operational node and conduct active defense operations while prioritizing actions to accomplish multiple tasks.

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in single node configuration, three or more available GMD fire control workstations, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to staff an operational GMD fire control node and conduct active defense operations in conjunction with GMDBML Level XI. GMD fire control system outages should consist of three to four (3-4) subsystem outages total. Volume of threats should induce Low Missile Procedures. After validation of successful completion of tables IX and X in the crew

trainer's leader book, standard is met if the crew scores 90% on higher on each of two failover scenarios.

d. **Subtasks**:

(3) DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC): The evaluator will score the crew's performance using the applicable positional scorecard. The individual must score a minimum of 90 points on each of the two "failover" scenarios.

(4) The evaluator will present an emergency scenario from the list below during Crisis, Combat, and Recovery Operations.

(a) DTMS GMD Collective Tasks 40-5-1003/2003 Perform Emergency Actions (MDE)/(FDC).

1. React to a bomb threat.
2. React to a fire.
3. React to a medical emergency.
4. React to a natural disaster or severe/inclement weather.
5. React to a duress situation.
6. Perform total evacuation.

(b) The evaluator will score the crew as either "GO" or "NO-GO" based on performance of steps responding to an emergency.

(5) Outbrief / AAR. Evaluator will provide copies of the scorecards and written test results to the individual to reflect either the successful completion or the attempt of table XI. The trainer will post the scorecards and written test results in their leader books and enter the results in DTMS to annotate the successful completion or attempt of table XI.

(6) Evaluator will notify the unit S-3 if the crew is prepared to undergo table XII.

TABLE XII

3-22. Used to assess the crew's ability to conduct operations in a more intense environment while in a degraded state and under emergency conditions. Table XII consists of day-to-day, crisis, combat, and recovery activities required to staff an operational node and conduct active defense operations while prioritizing actions to accomplish multiple tasks. Table XII is an External Evaluation (EXEVAL).

a. **Task:** Operate and maintain situational awareness utilizing a GMD fire control and perform required crew tasks.

b. **Conditions:** Given a GMD fire control training environment in single node configuration, three or more available GMD fire control workstations, C2BMC, supporting subsystems, all required checklists, manuals, SOPs, and a crew.

c. **Standards:** Crewmembers perform crisis, combat, and recovery tasks required to staff an operational GMD fire control node and conduct active defense operations in conjunction with GMDBML Level IX-XI. GMD fire control system outages should consist of four to five (4-5) subsystem outages total. Volume of threats should induce Low Missile Procedures. After validation of successful completion of tables IX through XI in the crew trainer's leader book, standard is met if the crew scores 90 points or higher on each of two failover scenarios.

d. **Subtasks:**

(1) DTMS GMD Collective Tasks 40-5-1002/2002 Conduct Ground-based Midcourse Defense (GMD) (MDE)/(FDC): The evaluator will score the crew's performance using the applicable positional scorecard. The crew must score a minimum of 90 points on each of the two "failover" scenarios.

(2) The evaluator will present an emergency scenario from the list below during Crisis, Combat, and Recovery Operations.
   (a) DTMS GMD Collective Tasks 40-5-1003/2003 Perform Emergency Actions (MDE)/(FDC).
      1. React to a bomb threat.
      2. React to a fire.
      3. React to a medical emergency.
      4. React to a natural disaster or severe/inclement weather.
      5. React to a duress situation.
      6. Perform total evacuation.
   (b) The evaluator will score the crew as either “GO” or “NO-GO” based on performance of steps responding to an emergency.

(3) Outbrief / AAR. Evaluator will provide copies of the scorecards and written test results to the individual to reflect either the successful completion or the attempt of table XII. The trainer will post the scorecards and written test results in their leader books and enter the results into DTMS to annotate the successful completion or attempt of table XII.

(4) Evaluator will notify the certification authority of the recommendation for table XII certification of the evaluated crew or discuss requirements with trainer prior to another certification attempt.

Chapter 4

Ground-based Midcourse Defense Battle Management Levels

The purpose of this chapter identifies the three categories of GMDBMLs, and their association with the GMD gunnery tables. The goal of the GMDBML system is to ensure crewmembers master individual skills prior to operating in a position for missile defense that is beyond their skill level.

CATEGORIES

4-1. The three categories of GMDBMLs are basic, intermediate and advanced. Table 4-1 associates each of the GMDBMLs to its corresponding GMD gunnery table.

a. Basic GMDBMLs concentrate on providing crewmembers with the basic skills necessary to identify and differentiate between threat and non-threat ballistic missiles in accordance with SOPs, TSOPs, and applicable command directives. The basic GMDBMLs consist of I, IIa, IIb, IIc, IId, IIe, III and IV.

b. Intermediary GMDBMLs are to prepare the crewmembers to conduct crisis and combat operations while simultaneously reacting to a variety of potential emergency scenarios in accordance with SOPs and safety directives.

c. Advanced GMDBMLs test a crew's ability to conduct crisis and combat operations while under stress in a degraded environment. Advanced GMDBMLs require extreme focus on mission accomplishment, crew coordination and specific communications.

CERTIFICATION CONCEPT

4-2. The Commander, USASMDC/ARSTRAT has the responsibility and authority to develop and maintain certified GMD operators for the combatant commander. The goal of the certification program is standardization and performance proficiency for all crewmembers and crews. Therefore, prior to standing unsupervised GMD crew duty, all GMD Soldiers must successfully complete table IV requirements as identified in this document, and all battle-rostered crews must complete table VIII requirements.

Table 4-1. GMD Battle Management Levels

GMDBML	***Gunnery Table***	***Task***
Basic GMDBMLs		
I	I	Configure and react to operational status change
IIa	II	Space launch / non-threat event
IIb	II	Test launch / non-threat event
IIc	II	Threat ICBM launch event
IId	II	Threat IRBM launch event
IIe	II	Failed Space/Test launch resulting in a threat to the defended area

Table 4-1. GMD Battle Management Levels (cont.)

GMDBML	*Gunnery Table*	*Task*
III	III	Combination of two events
IV	IV	Combination of three events
Intermediate GMDBMLs		
V	V	Emergency procedures
VI	VI	Combination of four events
VII	VII	Combination of five events
VIII	VIII	Combination of six events
Advanced GMDBMLs		
IX	IX	Degraded Operations – Workstation loss or losses
X	X	Degraded Operations – Emergency procedure
XI	XI	Degraded Operations – Workstation loss or losses and Emergency

GMDBML: Ground-based Midcourse Defense battle management level

ICBM: intercontinental ballistic missile

IRBM: intermediate-range ballistic missile

Appendix A

Gunnery Score Sheets

Standardized evaluations ensure trained crewmembers comply with established procedures. However, without clearly identifiable performance measures and standardized score sheets to record the results, ORE would not identify trends in crewmember performance.

PURPOSE

A-1. This appendix provides a description of the gunnery table IV Hands-on Evaluation score sheet and the Table VIII Score Sheet. It explains the purpose of each sheet, the proper way to fill in the tasks and performance measures, and how to use each during an ORE. Included are blank copies of score sheets along with completed examples

GENERAL

A-2. Standardization is essential to establish effective training and evaluation programs, as well as enable crewmember comparison for trend analysis to help determine overall crew force strengths and weaknesses. Only the HQ USASMDC Certification Authority may approve modification of the standardized formats. The individual Performance Steps in which crewmembers are evaluated may be modified/added/deleted in accordance with changes to DTMS GMD, Individual Tasks and appropriate weapon system tactics, techniques, and procedures to maintain accuracy.

TABLE IV SCORE SHEET

A-3. Source documents for table IV ORE scoring criteria and point deductions are contained in DTMS GMD Individual Tasks. However, the length of these documents, do not lend themselves well to scoring and documenting evaluation performance. The Table IV Hands-on Evaluation sheet documents ORE particulars (date, participants, script, etc.), errors, strengths and weaknesses. The tasks and point deductions listed on the Hands-on Evaluation sheet scoring criteria are from the DTMS GMD Individual and Collective tasks and serve as the official ORE record.

A-4. In preparation for an evaluation, the ORE team is responsible to make sure all applicable GMD operator common tasks and positional specific tasks from the DTMS GMD Individual Tasks have been included on the Hands-on Evaluation sheet and grouped by tasks number. Each crewmember undergoing evaluation will have a Table IV Hands-on Evaluation sheet tailored specifically to their position.

A-5. Just prior to starting an evaluation, evaluators will ensure all required information is recorded on the evaluation sheet. A copy of an MDE/FDC Table IV Hands-On Evaluation Sheet is located at Table A-1. The following explanations will help ensure the entire score sheet is thoroughly and properly completed.

a. **Task Title**: Should state “Conduct Ground-based Midcourse Defense (MDE)/(FDC)” for GMD table IV.

b. **Date:** Record the date the ORE occurred.

c. **Position**: Record the position of the individual receiving the evaluation (i.e. Trainee).

d. **Evaluation Type:**

e. **Results:** Place an 'X' next to the *Go* or *No Go* box to indicate pass or failure of the entire ORE.

f. **The Trainee's Name & Signature:** Trainee will sign and date.

g. **The Evaluator's Name & Signatur**e**:** Evaluator will sign and date.

h. **The Supervisor's Name & Signature:** Trainee's supervisor will sign and date.

i. **Run # c**olumns:

(1) **Mode**: Place an 'X' next to *Nominal* or *Failover* box to indicate the scenario mode.

(2) **GMD system trainer Scenario**: Record the scenario identification presented during each run.

(3) **Points Remaining**: Total all point deductions committed during scenario and subtract total error points from 100 to obtain remaining points and record this number in this box. Points remaining must be 90 or higher to receive an assessment of GO.

(4) **Go / No Go:** Place an 'X' next to *Go* or *No Go* box to indicate pass or failure for each specific run.

(5) **Task Errors:**

(a) **Go / No Go Pts:** Record points deducted for each error committed on the line that identifies the task not properly executed, in the appropriate run column. Only deduct points for first instance of error, multiple errors on same task do not result in additional point deductions.

(b) **Reason / Not Evaluated:** Check the "N/E" box if the task is not in the script and therefore not evaluated. If an assessed an error on a task, identify the reason for the error using the one or two letter codes at the end of the matrix. Codes are:

1. K = knowledge.
2. P = proficiency
3. SA = situational awareness
4. CD = checklist discipline

j. **Performance Step:** Identify each task by the T&EO GMD task number and task title. List each performance measure (step) that has GO/NO GO criteria along with a point value associated with the performance measure.

k. **Crew Members:** Record the Rank/Name of the other crewmembers by position who supported the ORE.

l. **Comments:** Record strengths and weaknesses of crewmember.

Conduct Crisis and Combat Operations Practical Evaluation Table III/IV & Table VII/VIII (Red) (Position)					
Date:	Written Score:		Results: ☐ GO ☐ NO GO		
EVALUATEE'S NAME:		SIGNATURE:			
EVALUATOR'S NAME:		SIGNATURE:			
SUPERVISOR'S NAME:		SIGNATURE:			
Crew Members:					
DIRECTOR	DEPUTY/ BA	FUTURE/WEAPONS	READINESS/ COMMUNICATIONS		
PERFORMANCE STEP TITLE *(Note: **This List is not all-inclusive.** Additional tasks may be evaluated. The Subjective Assessment is the evaluator's best judgment of overall compliance with the GMD Certification Program and will include, but is not limited to, compliance with the 100th MD BDE TSOP, engagement procedures and supplemental orders.)*			GST Scenario Nominal Failover Points Remaining ☐ GO ☐ NO GO CDRS Intent ☐ GO ☐ NO GO	GST Scenario Nominal Failover Points Remaining GO NO GO CDRS Intent GO NO GO	GST Scenario Nominal Failover Points Remaining ☐ GO ☐ NO GO CDRS Intent GO NO GO

BA: Battle Analyst
BDE: brigade
CDR: commander
GMD: Ground-based Midcourse Defense
GST: GMD System Trainer
MD: missile defense
TSOP: tactical standard operating procedures

Figure A-1. Example Table IV Hands-On Evaluation Worksheet

K = Knowledge P = Proficiency SA = Situational Awareness CD = Checklist Discipline N/E = Not Evaluated **Comments:**			

Figure A-1. Example Table IV Hands-On Evaluation Worksheet (cont.)

Table VIII & XII Score Sheet

A-6. Source documents for table VIII ORE scoring criteria and point deductions are contained in DTMS GMD Individual and Collective Tasks for BDE BN. However, the length of these documents, do not lend themselves well to scoring and documenting evaluation performance. The Table VIII Hands-on Evaluation sheet documents ORE particulars (date, participants, script, etc.), errors, strengths and weaknesses. The tasks and point deductions listed on the Hands-on Evaluation sheet scoring criteria are from the DTMS GMD Individual and Collective tasks and serve as the official ORE record.

A-7. Evaluators will record all required information on the Table VIII evaluation sheet. Copies of an MDE and FDC Table VIII *Score Sheets* are located at Table A-2 and Table A-3 respectively. The following explanations will help ensure the entire score sheet is thoroughly and properly completed.

a. **Crew**: Record the specific battle roster crew.

b. **Date:** Record the date the ORE occurred.

c. **Rating:** Circle the appropriate rating. If certified on the second or third attempt, indicate by placing the attempt number in the bracket (e.g. “Certified [_2_]”) and circle that rating.

d. **Participants**: Next to each identified position, list the individual who participated in the evaluation. On the right side, list the ORE team chief.

e. **Run** section: For each of the ORE scenarios, record:

(1) Circle either Nominal or Failover to indicate the scenario mode.

(2) Scenario identification number

(3) Record “Points Remaining” after totaling all point deductions.

(4) For each error, recording the following:
- (a) Task Step;
- (b) Performance Measure (task number and task title) that was not done correctly;
- (c) Points deducted for the error;
- (d) Reason for error
  1. K = knowledge.
  2. P = proficiency
  3. SA = situational awareness
  4. CD = checklist discipline
- (e) Circle ‘Y’ for yes or ‘N’ for no if corrective training should be accomplished.

(5) **Compliance & Subjective Assessment area:** Circle ‘GO / NO GO /Not Evaluated’ for each of the four listed criteria.

(6) **Comments:** Record comments on overall performance of crew. Comments should identify both strengths and weaknesses of the crew. Comments should be positive in nature, highlight areas where the crew excelled as well as address focus areas for crew improvement.

(7) **ORE Team Chief’s Signature & Date**: ORE team chief will sign and date.

(8) **Crew Director’s Signature & Date**: The Crew Director will sign and date.

A-8. An example of a completed Evaluators will record all required information on the Table VIII evaluation sheet. Copies of an MDE and FDC *Table VIII Score Sheets* are located at Table A-2 and Table A-3 respectively. The following explanations

Date:	ORE Team Chief:
CENTER: MDE	CREW:
Rank and Name: MDE Director	Written Test Score:
Rank and Name: MDE Deputy Director	Written Test Score:
Rank and Name: MDE Current Operations Officer	Written Test Score:
Rank and Name: MDE Future Operations Officer	Written Test Score:
Rank and Name: MDE Readiness Officer	Written Test Score:

MDE: Missile Defense Element
ORE: operational readiness evaluation

Figure A-2. Example MDE Table VIII/XII Score Worksheet

Nominal/ Failover

Task, Task Steps, Performance Measure Errors	Deductions	Reason				Corrective Training
Conduct Crisis, Combat, and Recovery Operations						
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N

Figure A-2. Example MDE Table VIII/XII Score Worksheet (cont.)

Nominal/ Failover

ORE ERRORS ASSESSED				
	Nominal/ Failover/ Other	Value	Subtotal	Run Total
Crew Critical	/ /	AP	/ /	/ /
Crew Major	/ /	4	/ /	/ /
Crew Minor	/ /	1	/ /	/ /
Scenarios Point Total				
C2 Total Points Remaining				
Emergency Procedures Task 1:			Go	No-Go
Emergency Procedures Task 2:			Go	No-Go
RATING:				
CERTIFIED (C1) (C2) (C3) (C4)				
UNCERTIFIED				
ORE Team Chief's Signature:			Date:	
Crew Director's Signature:				

ORE: operational readiness evaluation

Figure A-2. Example MDE Table VIII/XII Score Worksheet (cont.)

Date:	ORE Team Chief:
CENTER: FDC	CREW:
Rank and Name: FDC Director	Written Test Score:
Rank and Name: FDC Battle Analyst	Written Test Score:
Rank and Name: FDC Sensor	Written Test Score:
Rank and Name: FDC Weapons	Written Test Score:
Rank and Name: FDC Comms	Written Test Score:

FDC: Fire Direction Center
ORE: operational readiness evaluation

Figure A-3. Example FDC Table VIII/XII Score Worksheet

Nominal/ Failover

Task, Task Steps, Performance Measure Errors	Deductions	Reason				Corrective Training
Conduct Crisis, Combat, and Recovery Operations						
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N
		K	P	SA	CD	Y / N

Figure A-3. Example FDC Table VIII/XII Score Worksheet (cont.)

Nominal/ Failover

ORE ERRORS ASSESSED				
	Nominal/ Failover/ Other	Value	Subtotal	Run Total
Crew Critical	/ /	AP	/ /	/ /
Crew Major	/ /	4	/ /	/ /
Crew Minor	/ /	1	/ /	/ /
			Scenarios Point Total	
			C2 Total Points Remaining	
Emergency Procedures Task 1:			Go	No-Go
Emergency Procedures Task 2:			Go	No-Go
RATING:				
CERTIFIED (C1) (C2) (C3) (C4)				
UNCERTIFIED				
ORE Team Chief's Signature:			Date:	
Crew Director's Signature:				

ORE: operational readiness evaluation

Figure A-3. Example FDC Table VIII/XII Score Worksheet (cont.)

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Appendix B

Battle Roster

The Battle Roster is an important document used to track the certification status of crews assigned to perform the GMD mission at higher states of readiness. It is completed and maintained by the next higher headquarters following a Table VIII or XII, with a copy provided to the unit S3 that owns the battle roster crews.

PURPOSE

B-1. This appendix provides a description of the battle roster and crew certification roster, standardizing the report format requirements for the GMD gunnery program. It explains its purpose and the information contained in each category. Sample battle roster and crew certification roster for the GMD gunnery program are included.

GENERAL

B-2. Standardization is essential to establish a template of required information where the unit needs to add additional remarks for their own use. They may do so as long as the standardized format is not changed.

TABLE ENTRIES

B-3. Table B-1 illustrates a blank table IV / VIII certification roster. Tables B-2, B-3 and B-4 illustrate example, completed table IV & VIII certification rosters. The following explanations apply to all tables.

a. **Crew**: Indicates assignment of an individual to the specific battle roster crew.

b. **Rank**: Rank of the individual corresponding with Name column.

c. **Name**: Name of the individual corresponding with Rank column.

d. **Position**: GMD fire control Position in which the individual certified during the ORE.

e. **GFC/C Software Version**: The operational GMD baseline and GMD fire control software version used during the evaluation.

f. **Date Passed Table Certification**: Date of the table evaluation.

g. **Date Certification Expires**: 180 calendar days from the date of the table evaluation.

Table B-1. Example MDE/FDC GMD Table IV & Table VIII Roster Worksheet

MDE/FDC GMD Table VIII Battle Roster

Crew	Rank	Name	Position	GFC/C Software Version	Date Passed Table IV	Date Certification Expires

GFC/C: GMD fire control center
MDE: Missile Defense Element

Table B-2. EXAMPLE MDE GMD Table VIII Battle Roster

MDE GMD Table VIII Battle Roster

Crew	Rank	Name	Position	GFC/C Software Version	Date Passed Table IV	Date Certification Expires
ALPHA	LTC	Abrams	Director	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	MAJ	Adams	Deputy Director	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	CPT	Amos	Current Ops	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	SFC	Atoms	Future Ops	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	SSG	Avery	Readiness	7.– - 6B	04 Jan 10	02 Jul 10
BRAVO	LTC	Battles	Director	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	MAJ	Beatle	Deputy Director	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	CPT	Ballad	Current Ops	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	SFC	Bovary	Future Ops	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	SSG	Bullard	Readiness	7.– - 6B	05 Jan 10	03 Jul 10
CHARLIE	LTC	Callas	Director	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	MAJ	Caldwell	Deputy Director	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	CPT	Calloway	Current Ops	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	SFC	Calvert	Future Ops	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	SSG	Camacho	Readiness	7.– - 6B	07 Jan 10	05 Jul 10
DELTA	LTC	Dahlgren	Director	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	MAJ	Dahmer	Deputy Director	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	CPT	Dailey	Current Ops	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	SFC	Daily	Future Ops	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	SSG	Dalton	Readiness	7.– - 6B	06 Jan 10	04 Jul 10
ECHO	LTC	Eagan	Director	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	MAJ	Earhart	Deputy Director	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	CPT	Early	Current Ops	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	SFC	Easton	Future Ops	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	SSG	Eastwood	Readiness	7.– - 6B	04 Jan 10	02 Jul 10

GFC/C: GMD fire control center
MDE: Missile Defense Element
Ops: operations

Table B-3. EXAMPLE FDC GMD Table VIII Battle Roster

FDC GMD Table VIII Battle Roster

Crew	Rank	Name	Position	GFC/C Software Version	Date Passed Table IV	Date Certification Expires
ALPHA	MAJ	Abrams	Director	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	CPT	Adams	Battle Analyst	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	1LT	Amos	Sensors	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	SSG	Atoms	Weapons	7.– - 6B	04 Jan 10	02 Jul 10
ALPHA	SGT	Avery	Communications	7.– - 6B	04 Jan 10	02 Jul 10
BRAVO	MAJ	Battles	Director	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	CPT	Beatle	Battle Analyst	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	1LT	Ballad	Sensors	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	SSG	Bovary	Weapons	7.– - 6B	05 Jan 10	03 Jul 10
BRAVO	SGT	Bullard	Communications	7.– - 6B	05 Jan 10	03 Jul 10
CHARLIE	MAJ	Callas	Director	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	CPT	Caldwell	Battle Analyst	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	1LT	Calloway	Sensors	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	SSG	Calvert	Weapons	7.– - 6B	07 Jan 10	05 Jul 10
CHARLIE	SGT	Camacho	Communications	7.– - 6B	07 Jan 10	05 Jul 10
DELTA	MAJ	Dahlgren	Director	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	CPT	Dahmer	Battle Analyst	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	1LT	Dailey	Sensors	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	SSG	Daily	Weapons	7.– - 6B	06 Jan 10	04 Jul 10
DELTA	SGT	Dalton	Communications	7.– - 6B	06 Jan 10	04 Jul 10
ECHO	MAJ	Eagan	Director	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	CPT	Earhart	Battle Analyst	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	1LT	Early	Sensors	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	SSG	Easton	Weapons	7.– - 6B	04 Jan 10	02 Jul 10
ECHO	SGT	Eastwood	Communications	7.– - 6B	04 Jan 10	02 Jul 10

FDC: Fire Direction Center
GFC/C: GMD fire control center

Table B-4. EXAMPLE MDE / FDC Table IV Crew Certification Roster

MDE/FDC Table IV Crew Certification Roster

Crew	Rank	Name	Position	GFC/C Software Version	Date Passed Table VIII	Date Certification Expires
BDE ORE	LTC	Oberman	Director	7.2-6B	01 Dec 09	29 May 10
BDE ORE	MAJ	Ochoa	Deputy Director	7.2-6B	01 Dec 09	29 May 10
BDE ORE	CPT	Odon	Current Ops	7.2-6B	01 Dec 09	29 May 10
BDE ORE	SFC	Orion	Readiness	7.2-6B	01 Dec 09	29 May 10
ALPHA	LTC	Abrams	Director	7.2-6B	14 Dec 09	11 Jun 10
ALPHA	MAJ	Adams	Deputy Director	7.2-6B	14 Dec 09	11 Jun 10
ALPHA	CPT	Amos	Current Ops	7.2-6B	14 Dec 09	11 Jun 10
ALPHA	SFC	Atoms	Future Ops	7.2-6B	14 Dec 09	11 Jun 10
ALPHA	SFC	Avery	Readiness	7.2-6B	04 Jan 10	02 Jul 10
BRAVO	LTC	Battles	Director	7.2-6B	09 Dec 09	06 Jun 10
BRAVO	MAJ	Beatle	Deputy Director	7.2-6B	09 Dec 09	06 Jun 10
BRAVO	CPT	Ballad	Current Ops	7.2-6B	09 Dec 09	06 Jun 10
BRAVO	SFC	Bovary	Future Ops	7.2-6B	09 Dec 09	06 Jun 10
BRAVO	SFC	Bullard	Readiness	7.2-6B	09 Dec 09	06 Jun 10
CHARLIE	LTC	Callas	Director	7.2-6B	08 Dec 09	05 Jun 10
CHARLIE	MAJ	Caldwell	Deputy Director	7.2-6B	08 Dec 09	05 Jun 10
CHARLIE	CPT	Calloway	Current Ops	7.2-6B	08 Dec 09	05 Jun 10
CHARLIE	SFC	Calvert	Future Ops	7.2-6B	08 Dec 09	05 Jun 10
CHARLIE	SFC	Calvert	Future Ops – 2nd	7.2-6B	09 Dec 09	06 Jun 10
CHARLIE	SSG	Camacho	Readiness	7.2-6B	08 Dec 09	05 Jun 10
DELTA	LTC	Dahlgren	Director	7.2-6B	02 Dec 09	30 May 10
DELTA	MAJ	Dahmer	Deputy Director	7.2-6B	02 Dec 09	30 May 10
DELTA	CPT	Dailey	Current Ops	7.2-6B	02 Dec 09	30 May 10
DELTA	SFC	Daily	Future Ops	7.2-6B	02 Dec 09	30 May 10
DELTA	SFC	Dalton	Readiness	7.2-6B	02 Dec 09	30 May 10
ECHO	LTC	Eagan	Director	7.2-6B	02 Dec 09	30 May 10
ECHO	MAJ	Earhart	Deputy Director	7.2-6B	02 Dec 09	30 May 10
ECHO	CPT	Early	Current Ops	7.2-6B	22 Oct 09	19 Apr 10
ECHO	SFC	Easton	Future Ops	7.2-6B	02 Dec 09	30 May 10
ECHO	SFC	Eastwood	Readiness	7.2-6B	10 Dec 09	07 Jun 10

2nd = Certification in second crew position

FDC: Fire Direction Center
GFC/C: GMD fire control center
MDE: Missile Defense Element
Ops: Operations

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Appendix C

White Cell Requirements

The proper execution of a White Cell role-play to provide realistic simulation support during training and evaluations reinforces the concept of 'train how we fight'. A well-prepared, organized White Cell support infrastructure is critical to providing timely and realistic training and evaluation support.

PURPOSE

C-1. This appendix identifies the white cell support requirements for the GMD gunnery program.

GENERAL

C-2. White cell is a term used to identify personnel supporting a training/evaluation event who are external to the event itself. Members of the same crew supporting training event for another crewmember are not white cell participants. White cell personnel are not trainers/evaluators, but provide direct support to the event. White cell personnel only interact with the trainee when providing stimuli in support of the event. Crewmembers will not act as a trainer/evaluator unless asked to do so by the primary trainer/evaluator. For example, during a table IV for an RO, if asked, the MDE DIR may perform in the role of a white cell member. As a white cell member, the MDE DIR performs as needed by the ORE team chief. In this situation, because the MDE is functioning per directions of the ORE team chief and not under evaluation, it is acceptable that the MDE DIR may perform actions contrary to established procedures. If this occurs, no repercussions will result from directed actions.

COMPOSITION

C-3. White cell composition is purely dependent upon the event objective. For example, a Table IV may have as many as eight white cell participants simulating external agencies such as the FDC, N2C2, MWC, and sensor chat. Regardless of the composition, all personnel are part of the white cell and directly support the primary trainer/evaluator.

C-4. Ideally, white cell composition is determined by using one person for each role. Training/evaluation is degraded when the trainee hears the voice of an individual previously identified in a different role. Such an occurrence may cause momentary confusion for the trainee and evaluators should implement procedures to prevent or limit such a practice.

C-5. The event director (e.g. primary trainer, ORE team chief) should strive for maximum white cell composition, but not cancel the event unless there is less than the minimum number required.

C-6. If the event director is unsure of the exact number of desired personnel the trainee may interact with, the event director should analyze training and evaluation guides/outlines to identify these requirements. The event director should categorize requirements white cell personnel as either 'internal' or 'external'. Internal personnel are those physical bodies the trainee will physically interact with; this is the minimum number of white cell participants. External personnel are those the trainee will interact with via a communication device (i.e. telephone, internet chat). The internal and external participants create the maximum number of white cell participants.

TRAINING

C-7. All white cell personnel must be trained and evaluated on their ability to perform in accordance with realistic expectations. It is not sufficient to assume a certified Soldier in a particular crew position can correctly perform the required white cell tasks. Most certified Soldiers are unable perform to white cell standards without specific training regarding the required tasks.

C-8. All personnel supporting the white cell must provide safe training by designing, developing and implementing realistic, viable training that:

- does not jeopardize lives and equipment;
- eliminates or minimizes the risks involved in relation to the training benefits;
- includes controls to eliminate/reduce the risk or hazard;
- integrates safety, risk management, and operational area security considerations into training and training material where appropriate.

C-9. GMD Master Gunners should schedule and conduct white cell training and evaluations IAW the GMD gunnery program. Soldiers who have had their white cell performance validated should have this recorded in their ITRs. Sustainment of such skills is required as with any other proficiency, requiring GMD Master Gunners to perform sustainment training of those Soldiers. White cell skills can usually be retained for no more than six months from the last time performed. Anyone who has not performed white cell in the past six months should be retrained prior to being used in a training/evaluation event.

C-10. Because of the sensitive nature of evaluations, all white cell personnel should be trained or receive refresher training before participating in an evaluation. Doing so will ensure white cell personnel are not the cause of a Soldier's error during the evaluation, a potential reason for halting an evaluation in progress.

C-11. When only one GST node is available, the sixth workstation shall be reserved for use by white cell personnel whose actions are driven by reacting to data displayed on the GFC and may need to interact with the GFC to correct system operations.

EXECUTION

C-12. During training or evaluation, the primary trainer/evaluator will brief the white cell privately before the start of each GMD system trainer scenario. The primary trainer/evaluator will inform the white cell of the training/evaluation objectives so white cell personnel can plan accordingly and improvise if necessary during GMD training/evaluations. The primary trainer/evaluator must inform the white cell about details of the GMD system trainer scenario they are about to run. At a minimum, the white cell personnel should know: nominal or failover operations, number of GBIs available at each location, threats and time of threat launches, threatened assets, subsystem outages (i.e. system, problem/cause, initial start and estimated time returning operational), GBI launch failures, and anything else not considered normal operations. All of this information is necessary to prepare the systems to provide timely and accurate stimuli as well as allow white cell personnel to consider how they will react, what they will say, and what actions they may need to take on the GMD fire control. Briefing the white cell privately before the event allows white cell personnel to provide feedback to the primary trainer/evaluator about system response ensuring the portrayal will support, not hinder, the achievement of the training/evaluation objective. White cell personnel who do not receive this information are at a great disadvantage regarding their ability to perform.

C-13. While running the GMD system trainer scenario, a trainer/evaluator must be available to white cell personnel for private conversations to help ensure accurate running of the scenario. The advantage of maintaining contact between white cell and trainer/evaluator personnel helps everyone identify irregular or unscripted errors as they occur and to work out potential problems. This gives the trainer/evaluator team a broader perspective about the trainee's performance while the event is in progress.

C-14. Prior to performing a hot wash/AAR, the primary trainer/evaluator must obtain white cell observations. White cell personnel commonly have unique insight into the trainee's performance due to of their direct interactions with the Soldier during the GMD system trainer scenario. These observations often provide clarification to Soldier actions and lead to a broader, in-depth understanding of what actually occurred during the GMD system trainer scenario, which leads to more accurate assessments of the performance.

C-15. During the hot wash/AAR, white cell personnel must be present and contribute just like any other member of the event. Evaluators should ask White Cell personnel to provide testimony regarding specific activities with which they were involved. Such participation by white cell personnel can often enlighten trainees who may have missed all or part of a scenario event, thereby helping the trainee to accept weaknesses they might otherwise would not.

SCRIPTS

C-16. White cell scripts are required during all training and evaluation. No one can accurately portray all the complex white cell roles without white cell personnel. White cell scripts should not be generic to all GMD training/evaluations conducted in a GMD system trainer but should include task specific actions and narrative, especially when considering "Nominal" versus "Failover" conditions. No single script is all encompassing and the only one needed. Update a white cell script whenever real-world procedures change for any roles/agencies portrayed in the script. Changes occur frequently and the trainer/evaluator should review any white cell script not confirmed as current prior to use. Outdated scripts should be updated before using them for training/evaluations.

C-17. The white cell script that follows in Table C-1 is an example to provide the reader with an understand of what a white cell script looks like, the way it is organized, and the general narrative within. This example is designed to support MDE training/evaluation performing the task "Conduct Crisis, Combat and Recovery Operations (Nominal)" and is laid out in a crew drill-like format. White cell personnel play their designated role, executing appropriate actions (gray boxes) and speaking appropriate narrative (white boxes). Within the script, roles are identified via brackets. For example, the Command Center Director is identified as (CCD). Columns are used to designate communication nets and aid in identifying actions and narrative applicable to a given role. Events are generally formatted so all steps are on the same page and easily seen by the white cell person. This keeps page flipping to a minimum and reduces the potential for the white cell person to lose their place.

Table C-1. SAMPLE MDE/FDC White Cell Script

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
Quick Alert	1.	First Quick Alert			
	2.	Activate the OPSLOOP (B/U OPSLOOP)			
	3.	[MWC] Standby. Standby.			
	4.	[CCD] Command Center's on.			
	5.	[MWC] Missile initiating for the exercise, secure comms in progress.		"	
	6.	"Intel, Space, Systems, Air, JSPOC, Solar, STRAT, Land, Cyber, Special Act, FEMA, (Defense), Battalion.			
	7.	[MWC] Sir, for the exercise, we have a Quick Alert. At a time of HHMM x-ray, MCS is reporting a Quick Alert from [country]. Standby for possible Missile Event.			
	8.	[CCD] CCD copies. Intel?			
	9.	[Intel] Intel Sir. We are not on POI for [country]. Intel complete.			
	10.	Additional Quick Alerts			
	11.	[MWC] Sir, for the exercise, we have a Quick Alert. At a time of HHMM x-ray, MCS is reporting a Quick Alert from [country]. Standby for possible Missile Event.			
	12.	[CCD] CCD copies.			
	13.	Go to Summary Format after 5-6 Quick Alerts (Report QAs / theater events when time permits. When giving the report, use the total number QAs / theater events being reported about.			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	14.	[MWC] Sir, for the exercise, recommend Summary Format.			
First Missile Event (fan) is theater	15.	[CCD] For the exercise, Summary Format is approved.			
	16.	[MWC] Sir, for the exercise, we have a Missile Event, this is not a threat to North America. Commander NORAD assessment is required. At a time of HHMM x-ray, MCS is reporting the launch of a [SCUD-C/NODONG] from North Korea on an azimuth of [125/110] degrees. Standby for Site Report			
	17.	[CCD] CCD standing-by. Intel?			
	18.	[Intel] Sir, for the exercise, Intel has [positive/negative] indications of a probable launch from [country]. Assess combat against [South Korea/Japan]. Intel complete.			
	19.	[CCD] CCD copies.			
	20.	Pause for ~ 60 seconds			
	21.	[MWC] Sir, for the exercise MCS is reporting valid on the [#] [SCUD-C/NODONG] with [500/750] kilowatts. Recommend enter valid IR.			
	22.	[CCD] CCD copies. Enter valid IR for the exercise and Commander NORAD assessment is "No" for the [#] theater launch(es).			
	23.	[MWC] Missile copies for the exercise "Enter Valid IR and "No" for the [#] theater launch(es).			
	24.	Pause ~ 30 seconds			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	25.	[ABMO] For the exercise, Commander NORAD has issued Amber Warning for ANR, CANR, and WADS.			
Additional theater events	26.	[MWC] Sir, for the exercise, we have [#] additional [SCUD-C/NODONG] Missile Events, these are not a threat to North America. Commander NORAD assessment is required. At a time of HHMM x-ray, MCS is reporting the launch of [#] additional [SCUD-C/NODONG] from North Korea on an azimuth of [110-135] degrees. Standby for Site Report.			
	27.	[CCD] CCD copies. Standing-by.			
	28.	Pause for ~ 60 seconds			
	29.	[MWC] Sir, for the exercise MCS is reporting valid on the [#] [SCUD-C/NODONG] with 500/750] kilowatts. Recommend maintain valid IR.			
	30.	[CCD] CCD copies. For the exercise, maintain valid IR and Commander NORAD assessment remain“ a” "No" for all theater launch(es).			
	31.	[MWC] Missile copies for the exercise "maintain Valid IR and "No" for all theater launch(es).			
First strategic Missile Event	32.		Activates the GMD Link	MDE activates the DEFNET	
	33.	[MWC] Sir, for the exercise, we have a Missile Event, this is a threat to North America. Commander NORAD assessment is required. At a	[MDE] MDE initiating GMD Link, secure Comms. in progress. All centers check in. “MDO, DCD, (Defense), Battalion”	[MDE] Battalion, Defense. [BN] Copy Defense.	

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
		time of HHMM x-ray, MCS is reporting the launch of a TD-2 from North Korea on an azimuth of 71 degrees. This is to the Defended Area of [North America/west coast/California]. Standby for Site Report.	[MDE] Sir, for the exercise we have a threat in the system; stand-by for Track Reports.	*War gamming and P2P communications between BN FDC and MDE will take place on the DEFNET as necessary.*	
	34.	[CCD] CCD standing-by. Intel?	[MDO] Copy, standing-by.		DEP calls the BOC (IST)
	35.	[Intel] Sir, for the exercise, Intel has [positive/negative] indications of a probable launch from [country]. Assess combat against North America. Intel complete.			[BOC] ESS. BOC] Copy. Readiness calls MDIOC GECIC (P2P)
		[CCD] CCD copies.	BN FDC Reports Initial Threat Track		[GECIC] GECIC
			[MDO] MDO copies.		(Readiness relays WP1)
			[MDE] Defense copies.		[GECIC] Copy.
	36.	Pause ~ 60 seconds			
	37.	[MWC] Sir, for the exercise MCS is reporting valid on the [#] TD-2(s) with 1000 kilowatts. Recommend [enter/maintain] valid IR.			
First strategic Missile Event (cont.)	38.	[CCD] CCD copies. For the exercise, [enter/maintain] valid IR for the exercise and Commander NORAD assessment is "Concern" for the [#] strategic launch(es).			
	39.	[MWC] Missile copies for the exercise "[enter/maintain] Valid IR and "Concern" for the [#] strategic launch(es).			Pause ~ 2-3 minutes
	40.	Pause for ~30 seconds			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	41.	[ABMO] For the exercise, Commander NORAD recommends flush ANR, CANR, and WADS.			
	42.		Reports “Valid Track”		
	43.		[MDE] MDO, Defense.		
	44.		[MDO] Go Defense.		
	45.		[MDE] Sir, for the exercise, valid track. [Track ID/Impact Location].		
	46.		[MDO] MDO copies.		
	47.		[FDC] Battalion copies.		
	48.	BN FDC reports WP1 achieved at FGA			
	49.		[MDO] MDO copies.		
	50.		[MDE] Defense copies.		
	51.				DEP relays status to the BOC (IST)
	52.				[BOC] Copy.
	53.	BN FDC reports WP1 achieved at Vandenberg Air Force Base			
	54.		[MDO] Copy, Battalion.		
	55.		[MDE] Copy, Battalion.		
	56.				DEP relays status to the BOC (IST)
	57.				[BOC] Copy.
	58.	Pause ~ 60 seconds.			
	59.		[MDO] Defense, for the exercise, Weapons Free authorization is granted by the [higher] at a time of HHMM x-ray.		
	60.		[MDE] Defense copies.		
	61.		[FDC] Battalion copies.		
	62.	Report Weapons Free			
	63.		[MDE] MDO Defense.		
	64.		[MDO] Go Defense.		
	65.		[MDE] Sir, for the exercise, Weapons Free has been attained.		

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	66.		[MDO] MDO copies.		
	67.		[FDC] Battalion copies.		
Intel inject	68.	[Intel] CCD, Intel with an input.			
	69.	[CCD] Go.			
	70.	[Intel] Sir, for the exercise, Intel is querying sources for Follow-on at this time. Intel complete.			
	71.	[CCD] Copy.			
Additional strategic Missile Event	72.	[MWC] Sir, for the exercise, we have an additional Missile Event, this is a threat to North America. Commander NORAD assessment is required. At a time of HHMM x-ray, MCS is reporting the launch of a TD-2 from North Korea on an azimuth of 71 degrees. This is to the Defended Area of [North America/west coast/California]. Standby for Site Report.	BN FDC reports additional threat track [MDO] MDO copies, standing-by. [MDE] MDE copies.		
	73.	[CCD] CCD standing-by.			
	74.	Pause ~ 60 seconds			
	75.	[MWC] Sir, for the exercise MCS is reporting valid on the [#] [SCUD-C/NODONG] with 1000 kilowatts. Recommend maintain valid IR.			
	76.	[CCD] CCD copies. For the exercise, maintain valid IR for the exercise and Commander NORAD assessment remain“ at "Concern" for the [#] strategic launch(es).			
	77.	[MWC] Missile copies for the exercise "maintain Valid IR and "Concern" for the [#] strategic launch(es).			
	78.	Pause ~ 30 seconds			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	79.		[MDO] Defense, for the exercise [###] is granted by the [###] at a time of HHMM X-ray.		
	80.		[MDE] Defense copies.		
	81.		[FDC] Battalion copies.		
	82.	BN FDC reports track update (when PBstr becomes a Cluster)			
	83.		[MDO] MDO copies.		
	84.		[MDE] MDE copies.		
GBI launch	85.	BN FDC reports a failed/timed-out GBI launch			
	86.		[MDO] MDO copies.		
	87.		[MDE] Defense copies.		
	88.	BN FDC reports a GBI OPSCAP change			
	89.		[MDO] MDO copies.		
	90.		[MDE] Defense copies.		
	91.	BN FDC reports a failed/timed-out In-flight status In-Flight Status Report (IFSR)			
	92.		[MDO] MDO copies.		
	93.		[MDE] Defense copies.		
First track to enter a'UEWR's coverage	94.	[MWC] Sir, for the exercise we have multiple L&PIs. These are a threat to North America. Commander NORAD assessment is required. At a time of HHMM x-ray, [Clear/Beale] is reporting multiple L&PIs with an earliest impact time of [impact time x-ray] vicinity [impact location]. We correlate this back to the launch out of [country]. Standby for Site Report.			
	95.	[CCD] Copy. Standing by.			
	96.	Pause ~ 60 seconds			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	97.	[MWC] Sir, for the exercise [Clear/Beale] is reporting valid on the L&PI with [#] missile(s), [#] objects in track. Recommend enter valid Radar East.			
	98.	[CCD] CCD copies. For the exercise, enter valid Radar East.			
	99.	[MWC] Missile copies for the exercise.			
	100.	Pause ~ 60 seconds			
	101.	[CCD] For the exercise, Commander NORAD assessment is""Yes" for the L&PIs.			
	102.	[MWC] Missile copies""Yes" for the exercise.			
	103.	Pause ~ 30 seconds			
	104.	[ABMO] For the exercise, Commander NORAD directs flush ANR, CANR, and WADS.			
	105.	Pause ~ 30 seconds			
	106.	[CCD] For the exercise, Commander NORAD has declared Big Noise, Applejack.			
	107.	[MWC] Missile copies Big Noise, Applejack for the exercise.			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
Additional tracks enter UEWR coverage	108.	[MWC] Sir, for the exercise we have multiple L&PIs. These are a threat to North America. Commander NORAD assessment is not required as we are at "Yes". At a time of HHMM x-ray, [Clear/Beale] is reporting multiple L&PIs with an earliest impact time of [impact time x-ray] vicinity [impact location]. We correlate this back to the launch out of [country]. Standby for Site Report.			
	109.	[CCD] Copy. Standing by.			
	110.	Pause ~ 60 seconds			
	111.	[MWC] Sir, for the exercise [Clear/Beale] is reporting valid on the L&PI with [#] missile(s), [#] objects in track. Recommend enter valid Radar East.			
	112.	[CCD] CCD copies. For the exercise, enter valid Radar East.			
	113.	[MWC] Missile copies for the exercise.			
NUDET (as necessary)	114.	[MWC] For the exercise, MCS is reporting a NUDET. This [is/is not] a threat to North America. Commander NORAD assessment [is/is not] required. At a time of HHMM x-ray, MCS is reporting a NUDET in the vicinity of [location] with an altitude of [#] feet with a yield of [15-35] kilotons.			
	115.	[CCD] Copy. Standing by.			
	116.	Pause ~ 60 seconds			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	117.	[MWC] For the exercise, MCS is reporting valid on the NUDET with an altitude of [#] feet with a yield of [15-35] kilotons. We do have ICADS correlation. Recommend maintain valid IR.			
	118.	[CCD] CCD copies. For the exercise, maintain valid IR and Commander NORAD assessment of the NUDET is [Yes/No/Concern].			
	119.	[MWC] Missile copies for the exercise.			
All threat ballistic objects have past impact times	120.	Reports Engagement Criteria "No" Met" / recommends Weapons Hold			
	121.		[MDE] MDO, Defense.		
	122.		[MDO] Go Defense.		
	123.		[MDE] Sir, for the exercise, all threat tracks have passed impact time, request weapons hold.		
	124.		[MDO] MDO copies. Stand-by.		
	125.	Pause ~ 30 seconds			
	126.		[MDO] Defense, MDO. Weapons Hold authorization has been granted by the [higher] at a time of HHMM x-ray.		
	127.		[MDE] Defense copies.		
	128.		[FDC] Battalion copies.		
	129.	Reports Weapons Hold			
	130.		[MDE] MDO, Defense.		
	131.		[MDO] Go Defense.		
	132.		[MDE] Sir for the exercise, “Weapons Hold” has been obtained.		
	133.		[MDE] Defense copies.		
	134.		[FDC] Battalion copies.		
	135.	Defense "complete“			

Table C-1. SAMPLE MDE/FDC White Cell Script (cont.)

Event	Step	CMD Operations Loop	GMD Link	DEFNET	P2P/IST/Admin
	136.	"Intel, Space, Systems, Air, JSPOC, Solar, STRAT, FEMA, 21st, DWC, (Defense), Battalion.	[MDE] Defense complete?		
	137.	[CCD] OPSLOOP release.	"MDO, DCD, (Defense), Battalion."	[MDE] DEFNET release.	
	138.		[MDO] GMD Link release.		

ABMO: Air Battle Management Officer
ANR: Alaskan NORAD Region
B/U: back up
BN: battalion
BOC: Brigade Operations Center
CANR: Canadian NORAD Region
CCD: Command Center Director
CMD: command
DCD: Deputy Command Director
DEFNET: defense net
DEP: Deputy Director (MDE)
ESS: enterprise survivable server
FDC: Fire Direction Center
FEMA: Federal Emergency Management Agency
GECIC: GMD Element Coordination and Information Center
GMD: Ground-based Midcourse Defense
ICADS: Integrated Coordination and Display System
IR: infrared
IST: Integrated Secure Telephone
JSPOC: Joint Space Operations Center
L&PI: launch & predicted impact
MCS: Mission Control Station
MDE: Missile Defense Element
MDIOC: Missile Defense Integration and Operations Center
MDO: Missile Defense Officer
MWC: Missile Warning Center
NORAD: North American Aerospace Defense Command
NUDET: nuclear detonation
OPSLOOP: operations loop
P2P: point to point
QA: quick alert
STRAT: Strategic Command
TD: Taepodong (missile)
WADS: Western Air Defense Sector

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

Acronym	Definition
100th MD BDE	100th Missile Defense Brigade
49th MD BN	49th Missile Defense Battalion
AAR	After Action Report
AN/SPY-1	AN – Joint system S – Surface ship P – Radar Y – Surveillance (target detecting and tracking) and Control (fire control and/or air control)
AN/TPY-2	AN – Joint system T – Ground transportable P – Radar Y – Surveillance (target detecting and tracking) and Control (fire control and/or air control)
ARSTRAT	Army Forces Strategic Command
BA	Battle Analyst (FDC)
BN	battalion
C2BMC	Command, Control, Battle Management and Communications
CCD	Command Center Director
CG	Commanding General
CO	Communications Operator (FDC)
COO	Current Operations Officer (MDE)
COP	common operational picture
CTTO	concurrent test, training and operation
DCG	Deputy Commanding General
DEFNET	defense network
DEP	Deputy Director (MDE)
DIR	Director (MDE & FDC)
DMETS	Distributed Multi-Echelon Training System
DS/XP	defense strategy / execution plan
DTMS	Digital Training Management System
FBM	Forward Based Mode
FCO	Fire Control Order
FDC	Fire Direction Center

FOO	Future Operations Officer (MDE)
GBI	Ground-Based Interceptor
GFC	GMD fire control
GMD	Ground-based Midcourse Defense
GMDBML	Ground-based Midcourse Defense Battle Management Level
GUI	graphical user interface
H&S	health and status
IDT	IFICS Data Terminal
IFICS	In-Flight Interceptor Communication System
IST	integrated secure telephone
MDE	Missile Defense Element
MDO	Missile Defense Officer
MTOE	Modified Table of Organization and Equipment
MWC	Missile Warning Center
N2C2	NORAD/USNORTHCOM Command Center
NCOIC	Non-Commisioned Officer In Charge
OE	operational element
ORE	operational readiness evaluation
POI	period of interest
RO	Readiness Officer (MDE)
ROE	rules of engagement
SBX	Sea-Based X-band radar
SO	Sensors Operator (FDC)
STE	secure terminal equipment
TC	Training Circular
TSOP	Tactical Standard Operating Procedure
US	United States
USASMDC	United States Army Space & Missile Defense Command
USNORTHCOM	United States Northern Command
USSTRATCOM	United States Strategic Command
WO	Weapons Operator (FDC)
WTP	weapons task plan

SECTION II – TERMS

Command, Control, Battle Management and Communications (C2BMC)

A program designed to provide Situational Awareness to all command levels. It uses deliberate, collaborative and crisis action ballistic missile defense planning among all echelons. C2BMC is the only method to control AN/TPY-2 (FBM) radars. Additionally, it forwards Aegis AN/SPY-1 radar tracks to the GMD fire control.

Concurrent Test, Training and Operation

The ability to conduct development and support activities such as testing, exercises, maintenance, training, and upgrades, for activated ballistic missile defense elements and multi-mission legacy weapon systems, while simultaneously maintaining readiness to execute missile defense operations.

Crew save

A crew save occurs when a member of the crew intervenes to correct the actions or information of another crewmember. Crew saves are not permitted during a table IV. If a crew save occurs during a table IV, the ORE team will review each situation on a case-by-case basis and deduct points based on the nature of the incident.

Distributed Multi-Echelon Training System (DMETS)

The DMETS system provides a distributed ballistic missile defense training and evaluation capability, across all execution levels (from integrated joint participation to individual unit training), that provides a live, virtual and constructive environment for initial/proficiency training, certifications, mission rehearsals, exercises and tactics, techniques, and procedures development. DMETS enables Warfighters to train where and how they fight by generating realistic, interactive, threat scenarios that address all phases of the kill chain with varied sensor/shooter combinations.

Event Director

The event (exercise/training) director is the primary training individual or ORE team chief who is responsible for providing specific direction to all event participants to include white cell. The event director should identify all requirements and expectations to white cell personnel as well as equipment operators and crewmembers.

Ground-based Midcourse Defense (GMD)

GMD system is comprehensive conglomeration of individual systems operating in synchronous effort providing the ability to react to a limited ballistic missile attack from a rogue state. The GMD mission is to provide defense against limited intermediate-range and intercontinental ballistic missiles to selected defended areas, engaging threats in the exoatmosphere as directed by the weapon release authority to meet Commanders' intent.

Ground-based Midcourse Defense (GMD) Fire Control

The GMD fire control enables decision makers to understand the threat situation, make informed decisions and mount a defense against a limited intermediate-range and intercontinental ballistic missile attack. The GMD Fire Control is the computational operation center of the GMD and is designed to take in GMD sensor information about a threat, plans plausible responses, develops a firing solution for each threat, issues task plans to sensors to coordinate the battle and sends launch decisions to the Ground-Based Interceptors targeted at each threat.

GMD Battle Management Level (GMDBML)

A skill building approach to training that ensures crewmembers to master individual skills prior to attempting to defend against a threat that is beyond their current skill level. Gunnery tables describe the tasks to train and provide an overall context while the GMDBMLs focus on TTPs and scenario utilization to train Soldiers to perform each table.

GMD Gunnery Program

A program designed to develop, train and test the proficiency of the individuals and crews in gunnery techniques. This program standardizes GMD gunnery training and gunnery skill qualifications through performance-oriented, sequential, progressive, realistic and challenging training. There are three levels of Gunnery

Advanced Gunnery Tables:

Advanced gunnery tables train crews to operate collectively as a whole in day-to-day, crisis, combat and recovery operations during degraded environments. Advanced gunnery tables include tables IX through XII and only apply to battle-rostered crews only.

Basic Gunnery Tables:

The basic gunnery tables train an individual Soldier to serve as crewmember for assigned tasks in day-to-day, crisis, combat and recovery operations. They reinforce a Soldiers knowledge level of the GMD fire control, supporting sub-systems, and tactics, techniques, and procedures. Basic gunnery tables include tables I through IV. Performing tables I through IV is mandatory for all crewmembers.

Intermediate Gunnery Tables:

Training table used to train individual Soldiers to perform as a crew. Intermediate gunnery tables train crews to operate collectively as a whole in day-to-day, crisis, combat and recovery operations with optimal environment (no degrades). Intermediate gunnery tables include tables V through VIII and only apply to battle-rostered crews.

Operating Element (OE)

A GMD Operating Element is a GMD fire control suite configured with operations software in a state of readiness that allows crewmembers to receive and react to real world stimulus. The two GMD OE are the operational configured GMD fire control systems at the MDE and FDC, and are part if the 100th MD BDE.

Operational Readiness Evaluation (ORE)

An ORE is a standardized evaluation consisting of a written test and hands-on scenarios designed to assess a Soldiers training to perform in a specific position or on a crew as a GMD operator. The ORE program ensures standardized use of TTPs and support material, ensure operating procedures meet mission requirements, validate training, and identify strengths, weaknesses and trends related to position and crew performance.

US Army Space and Missile Defense Command (USASMDC)

The Army's combat organization for planning, coordinating, integrating and executing space and missile defense operations. USASMDC is the Army Service Component Commander (ASCC) supporting USSTRATCOM.

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