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MARINE CORPS SYSTEMS COMMAND • PROGRAM MANAGER FOR AMMUNITION

# AMMUNITION

## QUARTERLY



### WHEN FRICTION MEETS DETERMINATION

FRICTION IS THE FORCE THAT RESISTS ALL ACTION AND SAPS ENERGY. IT MAKES THE SIMPLE DIFFICULT AND THE DIFFICULT SEEMINGLY IMPOSSIBLE....

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**Supporting The Warfighter ☆ A Marine Corps Tradition**

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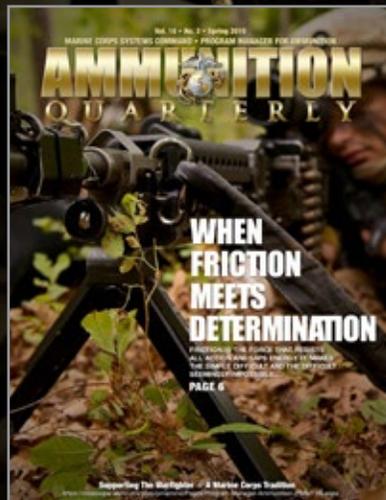
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**AMMUNITION QUARTERLY**

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Provide ideas/articles to the Program Manager for Ammunition, Marine Corps Systems Command, 2200 Lester Street, Quantico, VA 22134 or via email to AmmoMail@usmc.mil



**ON THE COVER:**

1stLt Robert R. Marraffa, a student with Charlie Company at The Basic School at Marine Corps Base Quantico, looks through his optic as he provides security at the training grounds of Quantico.

**Photo by**

Cpl Jose D. Lujano.

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Supporting The Warfighter ☆ A Marine Corps Tradition

**MARINE CORPS  
PROGRAM MANAGER FOR AMMUNITION**

# A Note From the PM

*By Scott Rideout,  
Program Manager for Ammunition,  
Marine Corps Systems Command*



Official Photo

**P**rogram Manager for Ammunition manages two Information Technology (IT) tools to enable efficient worldwide management of ground conventional ammunition. This quarter, I will focus on one of these tools, the Marine Ammunition Knowledge Enterprise (MAKE). MAKE provides enterprise content management, evolving knowledge management, information sharing and robust data mining capabilities, as well as serving as a hosting platform for several business applications (e.g. Environmental and Explosive Safety and Qualifications Certifications Program). MAKE provides a secure unified access point, designed to aggregate and personalize information through application-specific portlets.

As some of you are aware, there have been some challenges recently with MAKE. Last September,

MAKE underwent a technology update and navigation reconfiguration to support a required transition from a Marine Corps Systems Command server to the Marine Corps Enterprise Information Technology Services (MCEITS). While there was significant user testing performed prior to the transition to MCEITS, several unidentified anomalies were identified after the new version went live. Most significantly, the Department of Defense Identification Code (DODIC) search functionality experienced numerous glitches. I am now happy to say that most of the issues with MAKE, including the DODIC search functionality, are resolved. As of early April, only seven open issues remain, which should all be resolved by the time you read this.

Additionally, the changes made to MAKE were not sufficiently adver-

tised with the user community prior to roll out. To rectify this issue, a short training video describing the reconfigured core functionality of the DODIC search capability is on the MAKE homepage. Thank you for your patience as we improve MAKE. We are currently also working on upgrading our other IT tool, the Ordnance Information System – Marine Corps (OIS-MC). Look for more on that in future issues of Ammunition Quarterly.

**Semper Fi,**

Program Manager,  
Ammunition



U.S. Marine LCpl Michael Farris, an Artillery Cannoneer assigned to 1st Battalion, 12th Marine Regiment, Alpha Battery, carries a round back to his gun to resupply before a fire mission aboard Pohakuloa Training Area, Hawaii. Photo by LCpl Victor A. Mancilla.

# WHEN FRICTION MEETS DETERMINATION

By SSgt Scott Tabor, Ammunition Chief 3d Supply Bn, CLR-35

*“Friction is the force that resists all action and saps energy. It makes the simple difficult and the difficult seemingly impossible.”*

*The river at Crow Valley.*

Amongst several unique challenges Ammunition Technicians and logisticians face, all seem to have one in common; the clock. Annually, Ammunition Technicians from Ammunition Company, 3d Supply Bn, CLR-35, 3rd MLG participate in a bilateral training exercise with Marines and Airmen of the Republic of the Philippines known as Philippines-U.S. Amphibious Landing Exercise (PHIBLEX). During PHIBLEX -15, Ammunition Technicians supported the Special Purpose Marine Air Ground Task Force and ensured mission success despite tight timelines and never-ending pressure from uncontrollable outside sources. On one particular day of the exercise, what seemed like a short and simple ammunition operation directly supporting the Ground Combat Ele-

ment (GCE), turned out to be a race against the clock.

As the GCE continued to execute its scheme of maneuver, ammunition logistics were smooth and fluid, but smooth and fluid would soon be replaced with wet and soggy. The retrograde of unexpended ammunition was scheduled to take place on a Thursday, allowing adequate time to account for, package and prepare the break-bulk ammunition for shipment as well as allow room for Murphy’s Law of Ammunition. The Port Authority controlling the on load of ammunition to the USNS Sacagawea (T-AKE) requested that the U.S. Marines conduct the on load 24 hours sooner than previously scheduled. As Ammunition Marines always do, they jumped into action.



*Ammunition pre-staged for transportation at the Crow Valley FASP during PHIBLEX-15.*

The III Marine Expeditionary Brigade Ammunition Officer, CWO2 Richard Raines, devised and initiated an expedited retrograde plan. After sourcing ground transportation, he called the PHIBLEX Ammunition Chief, SSgt Scott Tabor, and informed him of the revised retrograde schedule. The contracted commercial vehicles were set to arrive in 11



*Extending Boom Forklifts (EBFL TREX) were unable to ford the river, and a TRAM had to be incorporated into loading and unloading of ammunition, supervised by Cpl Robert Aiken III.*

hours and the load plan called for 37 pallets of ammunition to be moved.

Under normal circumstances, with perfect weather conditions and unlimited resources, this would not have been a challenge. There was nothing normal, however, about the climate and terrain of the Philippines, specifically the training area called Crow Valley. Throughout the entire exercise, the Ammunition Marines battled intense heat, rain and the biggest obstacle: the river of Crow Valley.



*Cpl Jakob Pacey ground guides a fork lift at the Crow Valley FASP.*

According to Marine Corps Doctoral Publications 1, “Friction is the force that resists all action and saps energy. It makes the simple difficult and the difficult seemingly impossible.”

The river became the biggest friction point, as commercial vehicles could not traverse across it due to high water and loose, unstable soil. The ammunition had to be loaded onto tactical ve-

hicles at the Field Ammunition Supply Point (FASP), sent across the river, and then cross decked to commercial vehicles at a safe, stable staging area.

On a normal day when heavy rains were not a factor, traversing the river was difficult and sometimes required the use of a ground guide ensuring that the vehicles were traveling on solid ground. Water depth in areas did not exceed 2 feet. On this particular day, heavy rains had washed away solid ground and replaced it with fine silt found beneath almost 4 feet of fast-moving water. The added difficulty of traversing the river at night added stress and concern for all involved.

Knowing the possible obstacles, the Marines devised a plan and began to take action. SSgt Scott Tabor began identifying what pallets were ready and what ammunition needed to be kept on hand for future training events the GCE had planned, as Cpl Jacob Pacey created a shipping manifest. The storage team was comprised of Cpl Jesus Hernandez, Cpl Terrance O’Neil and Cpl Dillon Barhorst, and they were tasked with counting, banding and staging of ammunition that was ready to be loaded.

Due to operational commitments and lack of explosive drivers, the Logistics Combat Element had to complete the movement utilizing only two vehicles. At 1600, 3 hours from the initial message, the first of six round robin trips began. The skilled motor transport operators staged their vehicles, and the heavy equipment operator began loading the trucks based on the load plan and compatibility under the supervision of SSgt Scott Tabor. Approximately 7.5 hours later, the last pallet was loaded and the last strap was tightened. The Ammunition Technicians completed the task 30 minutes ahead



*The river at Crow Valley. The FASP was located to the left of this picture and the main camp was to the right.*

of schedule despite an afternoon storm and limited vehicle support.

This is just one example of the tireless efforts the Ammunition Marines exhibited during the 10-day exercise. The stress of early mornings and late nights was compounded by shortened timelines and difficult terrain. This type of movement could not have been accomplished without the team dynamics being in place. Marines are trained to be flexible and quick thinkers, but more importantly, they are taught to work as a team. Marines are also taught to accomplish the mission regardless of “friction,” and that is what these Ammunition Technicians were able to do.



*A HMMWV stuck in silt of the river.*

After the last truck was walked out of the FASP and the gate was closed, the Marines took a deep breath, patted each other on the back and headed off to get a few hours of sleep before the start of the next day. Plans change and Marines adapt, but one thing is certain; ammunition Marines will almost always be “up against the clock.”

# EXPENDITURE REPORTING

*By GySgt Ronald (Ron) A. Everson,  
Ammunition Logistics Operations Chief, Analysis and Evaluation (A&E) Team,  
Program Manager for Ammunition, Marine Corps Systems Command*

Expenditure reporting for Class V(W) ammunition is important for many reasons. It's an element of the custodial record of ammunition issues, expenditures and turn-ins. When combined with the original issue/turn-in documents supplied by the supporting unit Ammunition Tech/Chief, the unit Audit and Verification Officer (AVO) is able to properly certify the Class V(W) Expenditure Report (NAVMC 11381), as it will list all of the ammunition assets received, expended and turned in. If the numbers do not match what is on the original documents, the unit AVO should NOT certify that NAVMC 11381. Should an investigation happen, all expenditure reports and their accompanying documents will be reviewed for accuracy. MCO 8010.13 details the processes and procedures that a supported unit is required to follow to complete the ammunition expenditure report.

## General Procedures

The Class V(W) Expenditure Report (NAVMC 11381) is used to document all expenditures of Class V(W) assets. This form will be completed at the range by the Officer in Charge (OIC) and the Ammunition Technician/Handler, to include signatures of both parties, prior to any ammunition leaving the range for transport to the supporting ammunition storage activity (e.g., Ammunition Supply Point). The Range OIC must certify the receipt and expenditure data is accurate on the NAVMC 11381. The Range OIC signature on the NAVMC 11381 certifies the quantities listed on the form to be accurate. All NAVMC 11381s are finalized on the range, after the exercise is completed and before any unused ammunition is returned to the supporting ammunition storage activity.

## NAVMC 11381 Expenditure Report

While the NAVMC 11381 Expenditure Report is self-explanatory, it must be noted that all fields on the form should be completely filled out and legible, especially the ammunition asset information which includes the Document Number, Lot Number/Serial Number, and quantities issued/expended/turned in.

- **From.** Enter the billet of the individual accepting responsibility.
- **Range OIC or Explosive Ordnance Disposal** are required entries.
- **Print Name.** Print the name of the individual accepting responsibility.
- **Rank.** Rank of the individual accepting responsibility.
- **Unit Identification Code (UIC).** Enter the UIC of the unit accepting responsibility.
- **Unit.** Enter the unit name. For example, 2d Battalion, 9th Marine Regiment.
- **Phone Number.** Enter the phone number of the individual accepting responsibility.
- **Range/Training Area and Date.** Enter the range/training area and date(s) for the expenditure.
- **Receipt Document Number.** Enter the document number from the original receipt document.
- **Department of Defense Identification Code (DODIC).** Enter the DODIC from the original receipt document.
- **Nomenclature.** Enter the nomenclature from the original receipt document.
- **Lot Number/Serial Number.** Enter the lot/serial number from the original receipt document. Note all serial numbers for serialized munitions are annotated

on the issue/receipt documents and are to be attached to the expenditure. Each serial number will be entered as a separate line item on the NAVMC 11381. If a unit is issued (10) C995, there will be (10) entries on the NAVMC 11381 for each C995 serial number received.

- **Quantity (Qty) Received.** Enter the quantity received at the training range/area. Note all serial numbers for serialized munitions are annotated on the issue/receipt documents and are to be attached to the expenditure report with a copy of the expenditure message (if applicable).
- **Qty Expended.** Enter the quantity expended throughout the training evolution.
- **Qty Returned (Serviceable).** Enter the quantity of serviceable material returned to the supporting activity. Serviceable turn-ins are ammunition with a condition code of A, B, C or N. All unexpended Class V(W) will be returned using the same document number as the initial issue document using a suffix (for example, M1100010010001A).
- **Qty Returned (Unserviceable/Suspended).** Enter the quantity of unserviceable material returned to the supporting activity. Unserviceable returns are ammunition with condition codes of E, F, G and H. Suspended returns are ammunition with condition codes of J and K. All unexpended Class V(W) will be returned using the same document number as the initial issue document using a suffix (for example, M1100010010001A).
- **Propellant Increments (if applicable).** Enter the quantity of unused propellant increments that were burned on ranges per Individual Training Standards. Additionally, print the name, rank and provide a signature for the individual responsible for the supervision of the burn.
- **OIC Certification.** Upon completion of the training evolution, the OIC will certify “the receipt/expenditure data listed on the report is accurate and the “Qty Expended” listed above was consumed on the range/training area as documented.” Additionally, the OIC will certify that “a range sweep/amnesty brief was conducted and all expended ammunition retrograde material was checked for dangerous/hazardous items.”

- **Ammo Tech or Authorized Individual Certification.** Upon completion of the training evolution, the Ammunition Technician or authorized individual will certify that, “I have received the quantities of ammunition listed above and completed the turn-in documents (if applicable) for any unexpended Class V(W) and returned the unexpended assets to an authorized storage activity.”

**Class V(W) Expenditure Report**  
 NAVMC 11381 (Rev. 01-11) (EF) (Previous Editions will not be used)  
 FOUO - Privacy Sensitive when filled in

From: (OC/ECDD) Print Name: \_\_\_\_\_ Rank: \_\_\_\_\_ UIC: \_\_\_\_\_ Unit: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

Ref: (a) MCO P4602 150 (b) MCO 3570 1 (c) DA Pamphlet 385-63

1. Per the references, the following Class V(W) expenditure report is completed:  
 Range/Training Area: \_\_\_\_\_ Date(s): \_\_\_\_\_

RECEIPT DOCUMENT NUMBER	DOOC	NOMENCLATURE	LOT NUMBER/ SERIAL NUMBER (NOTE 1)	QTY RECEIVED (NOTE 1)	QTY EXPENDED	QTY TURNED IN (SERVICEABLE) (NOTES 2,3)	QTY TURNED IN (UNSERVICEABLE) (NOTES 2,3)

(If applicable) \_\_\_\_\_ (Number) unused propellant increments were burned on ranges per Individual Training Standards, under the supervision of the \_\_\_\_\_  
 Position Commander: \_\_\_\_\_ (Print Name, Rank, Signature)

I certify the receipt/expenditure data listed above is accurate and the "Qty expended" as listed above was consumed on the range/training area as documented. That a range sweep/amnesty brief was conducted and all expended ammunition retrograde material was checked for dangerous/hazardous items.  
 OIC (Signature): \_\_\_\_\_ Date: \_\_\_\_\_

I certify that I have received the quantities of ammunition listed above and completed the turn-in documents (if applicable) for any unexpended Class V(W) per note 2 and returned the unexpended assets to an authorized storage activity.  
 Ammo Tech or Authorized Individual: \_\_\_\_\_ (Print Name, Rank) \_\_\_\_\_  
 Unit name: \_\_\_\_\_  
 Phone number: \_\_\_\_\_  
 (Signature) \_\_\_\_\_ Date: \_\_\_\_\_

NOTE 1: All serial numbers for serialized munitions are annotated on the issue/turn-in documents attached to this expenditure report with a copy of the expenditure message.  
 NOTE 2: Unexpended Class V(W) will be turned in using the same document number as the initial issue document using a suffix (Example M11000-0001-0001A).  
 NOTE 3: Serviceable Turn-in is ammunition with a condition code of A,B,C,N and Unserviceable Turn-in is ammunition with a condition code of E,F,G,H,I,K.  
 Attention: Expenditure reports are filed by fiscal year (F Y) and retained for current year plus two FY's.  
 (A&E Audit and Verification Officer Only):  
 I certify that I have audited this expenditure report against all receipt and turn-in documentation (DD 1348-1A) and corrective action:  is  is not required.  
 A&E Audit and Verification Officer (Rank/Print Name/Signature) \_\_\_\_\_ Date: \_\_\_\_\_

FOR OFFICIAL BUSINESS ONLY \_\_\_\_\_ of \_\_\_\_\_ Pages  
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Above is a screenshot of the NAVMC 11381, which can be downloaded from Naval Forms Online at: (Open Access) <https://navalforms.documentservices.dla.mil/>

- **A&E Audit and Verification Officer.** The A&E AVO will certify that he or she has audited the NAVMC 11381 expenditure report against all receipt and return documentation (DD Form 1348-1As) and annotate whether corrective action is/is not required.

**The NAVMC 11381 shall be:**

- Completed at the training area in cases where Class V(W) is being returned to a supporting activity.
- Completed within 48 hours after the training event in cases where all Class V(W) has been expended.
- Verified by the A&E AVO within 7 working days.
- Verified by the A&E AVO within 30 working days in training events considered exercise support.

# TWIN DRAGONS



By CWO2 Vicente Fregoso, Ammunition Officer,  
Henoko Ammunition Supply Point, 3d Supply Bn, CLR-35, 3rd MLG

*Exercise Ssang Yong 14. Republic of Korea. A CH-53's resupply of Class V(W) is off-loaded from the USNS Sacagawea.*

Ssang Yong 14 (SY14) is an annual, multinational, combined amphibious exercise conducted by the Marines and Sailors of the III Marine Expeditionary Force (MEF) alongside the Republic of Korea (ROK) Marine Corps in order to strengthen our interoperability and working relationship through a variety of military operations. This year's Ssang Yong exercise, which in Korean means Twin Dragons, was the largest amphibious exercise in the Korean Theater of Operation (KTO) to date. The combined force consisted of more than 13,000 personnel, 20 naval ships and 70 aircraft from the United States, ROK and Australia military forces. All of these forces were then aggregated to become three Marine Expeditionary Units—two U.S. and one ROK.

Sustaining such an exercise required multiple sources of supply, such as the U.S. Ship (USS) Bonhomme Richard (LHD-6), US Army Depot 2 (84th Ordnance Company), the Henoko Ammunition Supply Point (ASP)

and the U.S. Naval Ship (USNS) Sacagawea (T-AKE 2). For the purpose of this exercise and in an attempt to reaffirm over the horizon logistics and sea basing logistics, the main source of supply was the USNS Sacagawea.

The Sacagawea is a prepositioned dry cargo/ammunition ship operated by the Military Sealift Command (Military Preposition Force [MPF]), and is loaded to support war time requirements. These ships give U.S. regional combatant commanders the assurance that they will have what they need to quickly respond in a crisis—anywhere, anytime. More recently, these types of ships have become increasingly available for employment in contingency operations and in support of various training exercises such as SY14.

Months prior to the execution of the exercise and as requirements began to solidify, it became apparent that the need for blank ammunition will be required; but the Sacagawea is loaded only with live ammunition. Coordination was made with Blount Island

Command and Headquarters Marine Corps: Plans, Policies, and Operations to access certain stocks of ammunition and also load a shortfall package from Okinawa, Japan. This shortfall package of blank ammunition, ranging from small arms ammunition to shoulder fired rockets, was transported from the Henoko ASP to Tengan Pier for transport to KTO.

Ammunition and explosive requirements were consolidated under the Logistic Command Element (LCE) and a Total Ammunition Management Information System-Redesigned request, along with a Delegation of Authority, was subsequently submitted to the USNS Sacagawea for processing.

In an attempt to create a more realistic scenario, the Ammunition Holding Area (AHA) was kept to a minimum with regards to the total ammunition requirement needed for the exercise until after the initial wave landed and 'secured' the beaches in and around the city of

Pohang. Moreover, the echeloning of ammunition to the AHA throughout a 4-day period was required to simulate real-world resupplies to a forward deployed AHA. Multiple ship-to-shore connectors were utilized to off-load the ammunition, such as the CH-53 Sea Stallion, MV-22 Osprey, Landing Craft Air Cushion (LCAC) and Landing Craft Unit (LCU).

Prior to and during the execution of SY14, the flexibility of the break-bulk assets aboard the USNS Sacagawea became more and more evident. The embarked LCE was able to create off-load packages for the different days of sustainment while underway to KTO. Multiple times during the exercise, the crew was also able to conduct 'in-mag turn-ins' on certain items no longer needed ashore due to inclement weather or shortened time lines. These 'in-mag turn-ins' gave us the flexibility in ensuring that only ammunition and explosives required ashore were pulled out of the storage magazines and loaded onto the different conveyances. Unlike containerized loads where the entire container is off-loaded and opened, the break-bulk capabilities allows for selective offload of the required items only. The ability to conduct selective offloads minimizes excessive han-



*Exercise Ssang Yong 14. Republic of Korea. Class V(W) laden vehicles loaded onto an LCAC within the well deck of the USS Bonhomme Richard.*

dling and exposure, limits the amount of munition transported, and decreases the overall logistical footprint. This is in line with the cardinal rule of exposing the fewest number of people to the least amount of explosives for the shortest period of time.

One of the first friction points encountered was the need for a dedicated ship-to-shore connector. During the spring, the KTO experiences rain showers coupled with high winds. These two factors grounded all available aircraft and made the sea states unnavigable by logistical vessel. As such, hundreds of thousands of pounds of personnel, gear, vehicles and classes of supply waited in queue as the weather cleared. Once cleared, this 'back-log' of supplies was prioritized and sourced for transportation. If

there was no available ship to shore connector, the supplies were either supported later in the evolution or dropped altogether. Although this didn't happen to any Class V(W), the possibility lingered due to restrictions imposed on the transportation of hazardous material and movements of personnel. Attaining support for the Sacagawea off-load proved difficult, as surface and air conveyances belonged to other units also participating in SY14. Unfortunately, this happened during the retrograde of SY14, as well. Multiple units and thousands of pounds of gear, including Class V(W), needed transportation back to its point of origin, and requesting support from other retrograding units proved difficult as their assets were also fully employed.

Despite the challenges faced with sourcing different ship-to-shore connectors, the USNS Sacagawea, along with the embarked LCE, helped reaffirm the Marine Corps' Sea-Basing logistics concept. Since my last use of an MPF ship to support an exercise (Coconut Grove 2012 in Maldives), these platforms and this concept have evolved into a user-friendly system which enables the Marine Corps to fight tonight and win.



*Exercise Ssang Yong 14. Republic of Korea. Replenishment At Sea between the USS Bonhomme Richard, USNS Wally Schirra, Republic of Korea (ROK) Dokdo and the USS Denver. (U.S. Marine Corps Photo/CWO Vicente Fregoso)*

# ENHANCED GRENADE LETHALITY

ON TARGET EVEN WHEN ENEMY IS CONCEALED

By Eric Kowal, ARDEC Public Affairs



40mm SAGM Grenade Prototype

*This article originally appeared in the September/October, Volume 2, Issue 5, 2014 of the Army Technology magazine. It is reprinted with the permission of Mr. David McNally, Public Affairs Specialist, ARDEC, Managing Editor, Army Technology magazine*

**H**ow does the warfighter launch a grenade at the enemy and ensure it hits the target, especially when the enemy is in what is known as defilade, or concealment, behind natural or artificial obstacles?

Steven Gilbert and a team of about 10 engineers within the Joint Service Small Arms Program are trying to solve that counter-defilade puzzle, which also doubles the grenade's lethality in the process.

Gilbert is a project officer with the Armament Research, Development and Engineering Center. The engineering team is in the final phase of a project known as Small Arms Grenade Munitions, or SAGM.

The goal is to provide warfighters with the capability of shooting a 40mm low-velocity grenade out of an M203 or M320 rifle-mounted grenade launcher--with the certainty that if their target is hiding under

cover or behind an object, damage will still be inflicted.

In this case, according to Gilbert, the SAGM round more than doubles the lethality of the current 40mm grenade against targets in defilade.

The SAGM project began in 2011, and the solution it seeks is not expected to be in the hands of Project Manager Ammunition Systems until July 2015.

Two critical areas were identified in the request for the needed capability the SAGM project is pursuing. When the enemy is hiding, improper ranging and overshooting the target is not uncommon for Soldiers, since it is hard to locate the exact enemy position.

The first phase of the project entailed making the fuze component smaller while maintaining the same functionality. Engineers have taken a standard M433 grenade round and developed the SAGM.

Gilbert described the round as being complementary to the XM25. The XM25 is a Counter Defilade Target Engagement System, which has an onboard laser system that determines the distance to the target.

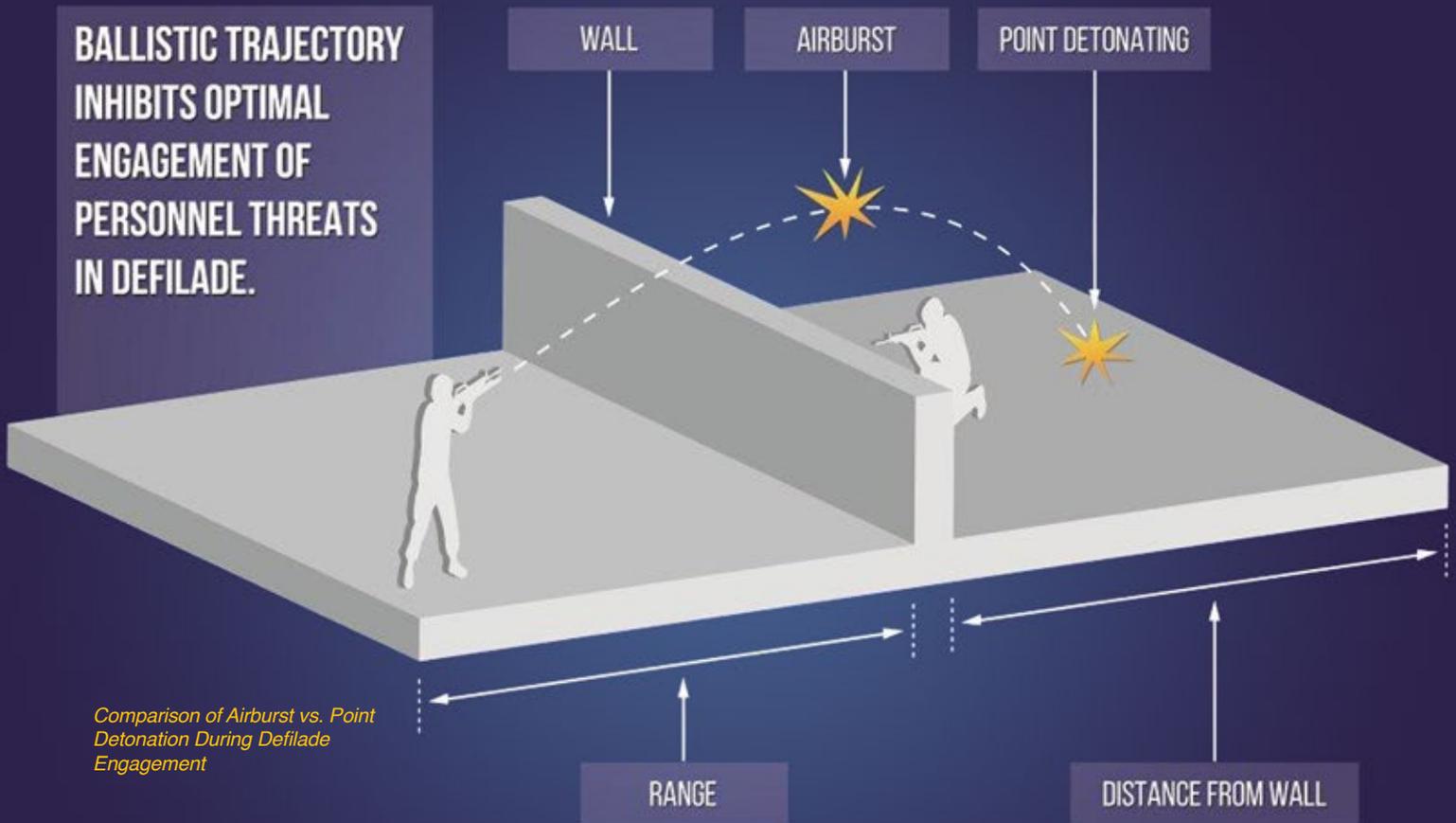
“SAGM is complimentary to that; we are not competing against it,” Gilbert explained. “The XM25 provides direct fire, SAGM is indirect.”

The second phase was making the fuze smart by including sensors. The round detonates in what is called airburst. It will detonate over and past defilade obstacles that are detected by the sensor.

During this phase, engineers worked to integrate sensors and logic devices to scan and filter the environment and autonomously airburst the fuze in the ideal spot.

“Its intent is detonate over defilade obstacles and filter out stuff you don't want it to go off on or over,” Gilbert said.

**BALLISTIC TRAJECTORY  
INHIBITS OPTIMAL  
ENGAGEMENT OF  
PERSONNEL THREATS  
IN DEFILADE.**



*Comparison of Airburst vs. Point Detonation During Defilade Engagement*

The third and current phase includes optimizing the fuze sensor that was integrated in phase two to improve ballistic accuracy, as well as integrating the new fuze with a live high-explosive warhead.

“Warfighters currently lack the ability to achieve desired accuracy and incapacitating effects against personnel targets in defilade at ranges from 51 to 500 meters,” Gilbert added.

With this new capability, which is fully autonomous onboard smart sensors, much like a smartphone, the grenade can perform a task without being told to do so by the user. It is designed so that, when fired, it will recognize its surroundings and can detonate over an obstacle that might conceal the enemy.



*SAGM Grenade Fuze Correctly Initiating Behind Dirt Berm*

The ballistic trajectory of legacy 40mm ammunition inhibits optimal engagement of personnel threats under cover. For these reasons, engineers are working to optimize ballistic trajectory and the overall accuracy and effectiveness of the grenade.

“There are three modes of firing,” Gilbert said.

“Air burst after detecting defilade is the first. The default is point detonation or when it hits the target. Lastly

there is a self-destruct feature which decreases collateral damage and reduces unexploded ordnance left on the battlefield or training ranges.”

In addition to improved firepower, the SAGM round does not require the user to carry any extra gear or weapon accessories, advancing the goal of reducing Soldier load.

“We successfully demonstrated the Phase 2 sensor technology in November 2013,” Gilbert said.

“This technology demonstration was conducted at Redstone Arsenal [Ala.] and it was shown that the sensor correctly detected defilade and air-burst-ed the round behind the defilade. This capability will inflict maximum lethality to any enemy personnel seeking cover behind defilade,” he said.



# MARINE CORPS AWARDS \$63 MILLION CONTRACT FOR SHOULDER LAUNCHED MUNITIONS

*By Chad Parkhill, Ed Woodruff and Gary Ostendorf*



**T**he Marine Corps has awarded a contract from the U.S. Department of Defense (DoD) Single Manager of Conventional Ammunition (SMCA) valued at \$63 million for Shoulder Launched Munitions (SLM). Under the new 4-year Indefinite Delivery Indefinite Quantity (IDIQ) contract, the company will manufacture M72 Light Assault Weapon (LAW) variants, to include M72A7 anti-armor, M72A9 anti-structure and M72AS 21mm sub-caliber training equipment.

The company has produced over 350,000 LAWs for U.S. and allied

military forces. The family of LAWs are billed as lightweight, accurate and powerful enough to breach walls, destroy enemy structures and penetrate armored vehicles.

Program execution is underway as the SLM program team in Mesa works on the first SMCA delivery order against the IDIQ contract.

The M72 LAW launcher manufacturing center is in Davidsville, Pennsylvania. The Davidsville facility will perform all production and acceptance testing on the launchers while loading, assembly and packing of the

system will take place at the Mesa location. Product deliveries on the first delivery order are scheduled through 2017. USMC funding for the M72 LAW delivery order is \$28.5 million for roughly 8,631 rounds.

As the primary single-use, disposable SLM program for the U.S. Marine Corps, the M72 LAW is a field proven system providing U.S. and allied warfighters the ability to outperform enemy threats.

The latest capability improvement to the M72 LAW family provides operators the ability to safely fire a

large caliber, high explosive warhead from the cover of small buildings or structures found on the urban battlefield. The M72 Fire from Enclosure system (known as M72 FFE) dramatically reduces the audible sound levels of the weapon system by over 50% compared to existing weapons in production today. As a result, weapon back blast, firing flash and audible signature are greatly reduced without compromising the compact size or low system weight of the traditional rocket propelled systems.

M72 FFE adopts proven features of the new M72 launcher now entering NATO service. An inline trigger improves gunner aiming accuracy, and results in higher probability of first round target hit. Carbon fiber launch tubes reduce weight, and shoot-thru tube end seals mean faster target engagement times. Additional enhancements include a combat proven modern dual safe fuse, an IR or visible laser sight to improve 1st shot accuracy and night operation, and improved ballistics.

Through current production of high performance and lightweight systems or near term advanced concepts of the M72 FFE, the company is advancing the capability, operations and missions of Marine Units around the world.



*M72A7 LAW in use during a training exercise as part of the squad/platoon mission. (Unknown Origin)*



*Marines participate in M72AS 21mm Trainer Launcher firing for improved marksmanship and accuracy from the kneeling position. (Camp Atterbury Public Affairs Photo by SSgt. David Bruce - Date Taken: 04/09/2011 - Location: CAMP ATTERBURY, IN)*



*From the standing position, Marines utilize the M72AS 21mm Trainer Launcher to improve marksmanship and weapon familiarization. (Camp Atterbury Public Affairs Photo by SSgt. David Bruce - Date Taken: 04/09/2011 - Location: CAMP ATTERBURY, IN)*



# PROMOTIONS

WE WOULD LIKE TO RECOGNIZE THE PEOPLE WHO WERE PROMOTED SINCE THE LAST EDITION OF AQ.

## HERE IS THE LTCOL

LANHAM, W. E. (SEL)

## HERE ARE THE CAPT'S

BARDO, E. H.  
ROY, C.L.

## HERE IS THE CW05

DOTSON, T.L.

## HERE ARE THE CW04'S

PARHAM, J.D.  
XIMENEZ, R.  
SCHOLTEN, J.J. (SEL)

## HERE ARE THE CW03'S

QUEEN, E.  
PULTORAK, M.  
COURTS, J. (SEL)  
HILTON, E.D. (SEL)  
HOLLINGSWORTH, J.H. III (SEL)  
RULLI, W.J. (SEL)  
WHITE, T.J. (SEL)

## Here are the CW02'S

FREGOSO, V.  
RAINES, R.L.  
REYNOLDS, M.L.  
TAYLOR, B.L.  
WALL, B.

## HERE ARE THE NEW WO'S

CASON, C. R.  
DOXEY, D. R.  
ELAM, A. G.  
GARCIA, D. J.  
LAWSON, D. L. JR.  
MARRERO, A. G.  
PRO, G. W.

## MGySgt's for the 2311 community:

MARAS, M.C.

## MSgt's for the 2311 community:

RODRIGUEZ, J.M.  
ROESLER, T.S.

## GySgt's for the 2311 community:

BARBITTA, D.R.  
HAMILTON, S.  
HECKER, D.W.  
KERNS, B.H.  
MCINTOSH, S.W.  
STPIERRE, J.J.  
TORRES, JR  
WEIDMAN, N.K.

**SHOW  
YOUR  
COLORS**



**YOUR  
LOGO  
HERE**

# NOTES FROM THE EDITOR

*By David Denomy, Editor, Ammunition Quarterly;  
Plans, Operations, and Safety Division;  
Program Manager for Ammunition, Marine Corps Systems Command*

**A**mmunition Professionals, first and foremost, welcome to the Spring 2015 issue of Ammunition Quarterly (AQ). This is the magazine's sixth edition with the enhanced graphics and dynamic editorial analysis process. If you have been a dedicated reader you can see just how far we have come in making this magazine a top shelf production with the modern layout and graphics that make you want to open it up and see what is inside.

As you the reader, if there is something that you would like to see or have ideas on how to make the content and illustrations more exciting, please pass it on and we will evaluate your recommendations for inclusion in the next and future editions. Please keep in mind, to make the magazine fresh and exciting and to remain pertinent we need your input. If you have an idea, or a major accomplishment that you or your unit has done, please send it in. Pictures are always welcome with write-ups of the event, all we ask is no Classified Information or anything that can be viewed as Operational Security information. In the past few months, there have been a lot of events that have affected the ammunition community.

The Marine Corps Ammunition Awards for Calendar Year 2014 was conducted this past February and the winners were announced in MARADMIN 102/15. The winners will be recognized at an Awards Presentation at the Marine Corps Museum in May.

There were two Friday the 13th days, one for February and one for March, where we celebrated Ammo Tech Day. Hopefully your unit was able to take some time off, enjoy some good chow and interact with some intermural sporting events.

The "show your colors" tee shirt design competition has not received any inputs in a while. I know that there are some artists out there who would like to have the opportunity for your unit to be showcased in AQ magazine. As always, please take a look at the artwork before you submit, it has to be in good taste and not derogatory or offensive in nature.

In closing, I feel like a broken record, I am plugging for articles from the fleet. Whether you are a PFC or LtCol, your opinions, ideas and experiences are going to be beneficial to the readers of this magazine. What's more, vital and pertinent information to your MOS will languish without your support. You do not have to be an English major or Combat Correspondent to supply valuable articles and pictures. We promise not to completely rewrite your article or judge you on your choice of grammar. All we ask is that you use your own words (or put in quotation marks any words that aren't your own and tell us who said/wrote it first!). Pictures can tell a thousand words, so the more the better. Remember, you get an official "I was published in Ammo Quarterly" coffee mug for any article that makes it to the magazine.

Send articles to [AmmoMail@usmc.mil](mailto:AmmoMail@usmc.mil).

Thanks for your readership, and keep those articles coming!

# MISSION

**In support of the National Strategic Plan and Defense Planning Goals, PM Ammo will conduct/leverage research, development and acquisition activities and execute post-production total life cycle management support for all conventional ground ammunition required by Marine forces to train for and successfully conduct Expeditionary Maneuver Warfare.**

**Our mission is clear—to introduce military munitions into the Marine Corps stockpile and manage all facets thereafter. From formulating budgets and developing acquisition strategies to procuring and disposing of munitions, PM Ammo supports the complete or total life cycle of ground conventional ammunition and explosives for our Corps.**



MARINE CORPS SYSTEMS COMMAND • PROGRAM MANAGER FOR AMMUNITION

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