

# INFANTRY NEWS



THE U.S. ARMY INFANTRY Board has submitted the following items:

**SIMATS BILL.** Tests have been conducted on both the Euromissile MILAN 2 and the Swedish BILL 2 (for Bofors, Infantry, Light, and Lethal) to determine the merits of each as a supplementary interim medium antitank system (SIMATS).

SIMATS is being considered as an intermediate supplement for the Dragon system pending adoption of the Advanced Antiarmor Weapon System, Medium (AAWS-M). The test criteria for SIMATS were to be those stated in the AAWS-M required operational capability.

The Infantry Board conducted the initial operational test and evaluation (IOTE) of the MILAN 2 from 1 October through 20 November 1987 at Fort Benning, as reported in *INFANTRY*, March-April 1988, pages 6-7.

The BILL is a man-portable (118-pound), medium-range (150-2,000 meter) antitank weapon composed of a firing stand and a wire-guided, gyro-stabilized missile. The firing stand includes the launch platform and firing mechanism. Each missile is housed in a separate container that serves as the launch tube for the missile. The BILL also has a battery-powered, air bottle-cooled, thermal imaging night sight. The missile warhead is designed for top attack (fly over, shoot down) by means of a hollow-charge unit that is canted 30 degrees downward and triggered by a proximity fuse. The missile also has an impact fuse.

The Infantry Board conducted its IOTE of the BILL during the period 7 April through 15 June 1988 to assess its operational effectiveness and suitability as a SIMATS. Three antiarmor sections—nine gunners and nine assis-

tant gunners from the 2d Brigade, 10th Mountain Division—participated in the test.

All of the crew members were qualified Dragon gunners and all served as gunners during the test, firing a total of 130 missiles. Eighty reliable missiles were fired against moving and stationary targets during daylight and darkness to determine the system's hit probability. At the conclusion of hit probability firing, additional missiles were fired to assess the performance of the BILL in regard to multiple engagements. Three U.S. Army Missile Repairmen (MOS 27E) performed intermediate direct support maintenance for the test systems.

Test data regarding transportability; portability; detectability; reliability; availability, and maintainability; human factors; and safety were collected throughout the testing. The test results will be used to support a decision on whether the system is suitable for use in high-priority units.

**TOW Training Strategy.** The Infantry School is reviewing the TOW training program with the intent of developing a TOW training strategy for external validation. (See also "TOW Training Strategy," Major Anthony DiStefano and Sergeant First Class David L. Bouldeu, *INFANTRY*, July-August 1988, pages 33-34.)

As part of the internal validation of this strategy, the Infantry Board conducted a concept evaluation program test comparing the effectiveness of the program of instruction (POI) used with the M70E2 TOW Guided Missile Training Device (M70) with that of a POI that combined the M70E2 with MILES (M70/MILES).

The test was conducted during the period 6-22 June 1988 using two 30-man groups of one station unit training III soldiers at Fort Benning. One group was trained in

accordance with the requirements of the M70 POI; the other group was trained using the M70/MILES POI. Upon completion of their training, each of the soldiers fired a live missile at a manned evasive target tank. All live missile firing was done during daylight using the day sight from the TOW-HMMWV platform.

The Infantry School will use the live fire hit scores in developing the TOW training strategy.

**Rifle Muzzle Stabilizer.** In April 1985 a soldier individual weapons group was established by the Army Materiel Command. The group operates under a memorandum of agreement between the Armament Research, Development, and Engineering Center; the Ballistics Research Laboratory; and the Human Engineering Laboratory. The group's activity is monitored by the Army Materiel Systems Analysis Activity. Its charter is to quantify factors that will contribute to the improvement of infantry small arms.

In response to the infantry's requirement to improve the effectiveness of the M16A2 rifle through the addition of a muzzle device, the Infantry School requested an evaluation of a muzzle device developed by the Naval Weapons Support Center (NWSC) and an adjustable muzzle stabilizer (AMS).

Each of these devices mounts on the M16A2 rifle and directs escaping propellant gases at the proper angle to eliminate the muzzle climb and horizontal swing inherent in shoulder-fired weapons used in the automatic mode. The AMS was designed to be adjustable to compensate for variations in barrel length, ammunition lot performance, and other conditions.

The Infantry Board conducted a concept evaluation program test of these muzzle stabilizers during the period 11 April through 7 June 1988

at Fort Benning. The test compared the performance of the standard M16A2 rifle, the M16A2 with the NWSC device, and the M16A2 with the AMS in the areas of burst dispersion, hit performance, signature effects, and human factors and safety.

Twenty-one soldiers in MOS 11B used each of the systems in a series of live-fire exercises during daylight to generate data on dispersion and hit performance. Hit performance data was collected against both moving and stationary targets using both semiautomatic and burst modes of fire from the foxhole, prone, kneeling, and standing positions. Target ranges varied from 50 to 580 meters depending on position and mode of fire. Separate exercises were conducted by testers to obtain data on signature effects and to determine the compatibility of the muzzle-device-equipped rifle with the AN/PVS-4 sight and with the blank firing device.

The Infantry School will use the test results in making decisions concerning equipping the M16A2 rifle with a muzzle stabilizer.

NEW TEC LESSONS have been distributed to the field recently--29 lessons on the M23 Mortar Ballistic Computer (MBC) and 14 on the M901 Improved TOW Vehicle (ITV).

The series of lessons on the MBC are designed to teach MOS 11C soldiers to use the MBC and compute any type of fire mission. Also included is a lesson on operator maintenance.

Six of the 14 lessons on the ITV were designed for MOS 11H gunner training. The remaining lessons are on the tactical employment of a TOW section.

AN ARMY-WIDE PROBLEM has been identified by the Army Materiel Command concerning the misapplication of bolts, improper mixing of different grades of bolts in parts bins, and the lack of awareness of bolt grades on the part of supply clerks, mechanics, and their supervisors.

Equipment scheduled for maintenance will be inspected and bolts in

critical areas will be checked to ensure that the bolts called for in the technical manuals are being used.

The problem has been caused by the fact that the Army has received shipments of bolts that did not conform to contract specifications.

Soldiers with questions about bolts or their application, or those who think they have a problem that is caused by bolts, are asked to contact their AMC Logistics Assistance Representatives.

A NEW LIGHT ARMORED vehicle was recently adopted by the French Army to replace its aging fleet of jeeps. The new vehicle, dubbed VBL, will come in combat and intelligence versions. It is designed to serve as a jeep while simultaneously providing NBC and small arms protection. Depending on its role, the VBL mounts a 7.62mm machinegun or an antitank guided missile (ATGM).



The VBL has a range of 600 kilometers (373 miles), weighs 3.3 tons, and can attain speeds of up to 90 kilometers (56 miles) per hour. Despite its armor protection, the amphibious VBL reportedly has the agility and mobility of a jeep.

The first 15 vehicles were delivered to selected French mechanized and armored units in January 1988 for tactical field tests.

FRANCE AND WEST GERMANY recently announced the creation of a mixed Franco-German brigade destined to reinforce the European leg of the North Atlantic alliance.

The brigade will be composed of five battalions: one command and support battalion (mixed), two infantry battal-

ions (one German, one French), one battalion of light armor (French), and one battalion of artillery (German).

Starting with a French officer, the brigade will be commanded by a brigadier general, alternating between French and German officers every two years.

The headquarters, which will be established in October 1988, will be located in Boblingen near Stuttgart. The remaining battalions are scheduled to be in place by 1989.

THE NATIONAL INFANTRY MUSEUM will hold its Eighth Annual Five-Mile Run on the last Saturday in October. The race, the Museum's biggest fund-raiser by far, has always been very successful, thanks to the support of its sponsors and the excellent participation by runners from Fort Benning and the surrounding community. Units, teams, or individuals from other installations are always welcome. Those who want to participate should contact the Museum and register in advance.

Members of the 7th Armored Division Association placed their traditional wreath on the 7th Armored Division Monument on the grounds of the Museum. Also participating in



the presentation were members of the 2d Battalion, 69th Armor assigned to Fort Benning.

The Museum has a number of artifacts in its collection that date from the 16th and 17th centuries. Notable in this group is a double-barreled, bronze Lantaka salute cannon from the deck of an early Spanish sailing vessel. The cannon is elaborately decorated in the North African Moroccan style. In addition to these patterns and styles of design are figures of pigs, dolphins, and an alligator.

The cannon was used at the close of the 19th century against U.S. troops in the Philippines. It is suspected that such things as rocks, nails, and broken glass were used as projectiles to be thrown from the cannon into the path of U.S. Infantrymen.

When the Spanish American War drew to a close, the cannon that now rests proudly at the National Infantry Museum was selected by Chaplain Edmund Easterbrook as a prize of war and sent home with his household goods. Chaplain Easterbrook served as Chief of Chaplains during the 1920s.

Another interesting artifact is a tapestry that dates back to the 15th century. It is of European origin and tells the story of an army, thought to be invincible, that was overcome when it lost its leader. It underscores the importance of leadership, a primary ingredient of a successful military unit.

The National Infantry Museum Society, formed at Fort Benning a number of years ago to assist the Museum with financial and volunteer support, is open to anyone who is interested in joining. The cost is \$2.00 for a one-year membership or \$10.00 for a lifetime membership.

Additional information about the Museum and the Society is available from the Director, National Infantry Museum, Fort Benning, GA 31905-5273; AUTOVON 835-2958 or commercial (404) 545-2958.

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**NEW, IMPROVED MRIs** (meals, ready to eat) will be in the field by 1990. They will include seven new main entrees—pork with rice, ham omelet, spaghetti and meat sauce, meatballs with rice, tuna and noodles, ham chunks in escalloped potatoes, and chicken with rice. The popular ham slices, chicken a la king, and roast beef will still be available too.

A new side dish, potatoes au gratin, will replace beans in tomato sauce and add five ounces to the weight of the entree combination. A beverage base and a popular brand-name candy will also be included.

**CAMOUFLAGE FACE PAINT** has been improved. The standard face paint now comes in three-inch metal tubes with a removable cap at each end. Since two colors are contained in each tube (and to provide for all environmental conditions), a total of three tubes is needed for each soldier.

The Natick Research and Development Center has replaced the tubes with a single, reclosable plastic container. Each compact contains four colors and a mirror to help the user



apply complete coverage.

The composition of the face paint has been changed to contain infrared reflectance properties commensurate with those of the battle dress uniform system, along with 20 percent insect repellent that will provide up to eight hours of protection, instead of the two to four hours provided by the current item.

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**THE U.S. ARMY NATICK** Research, Development, and Engineering Center is looking at new fibers that may reduce the weight of the vest and helmet in the personnel armor system for ground troops (PASGT).

One of these fibers, known as Spectra 1000, is expected to provide a 33 percent reduction in the weight of the helmet. Similar efforts are in progress to reduce the weight of the PASGT vest from nine pounds to six.

In both applications, the same level of protection and performance provided by the current fiber, Kevlar, will be maintained.

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**THE ROLLOVER PROTECTION** System (ROPS) is being installed on M151A2 trucks to protect riders in case of accident.

The system consists of modifications including rollbars, sidedoors, shoulder belts, and changes to the truck's top, floor, and fuel system.

The modification project should be completed next summer.

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**THE BRADLEY INSTRUCTOR** Detachment 29th Infantry Regiment at Fort Benning, was recently asked to clarify certain terms and procedures. The following response to that inquiry may also be of interest to others in the field:

**Define "unmask."** "Unmask" refers to that point at which the barrel of the weapon being used is free of obstructions and can engage targets—for example, when the firing vehicle moves forward enough to clear the 25mm barrel of the defensive berm.

**Must engagement be terminated with "cease fire"?** No. "Cease fire" is a common term that is used in a fire command, but any similar term may be used. For control of fires, a command should be given to stop the gunner from firing excessive ammunition. For timing procedures during an engagement (start/stop times), see page 10-17, paragraph 10-9a, FM 23-1, Bradley Fighting Vehicle Gunnery.

**Must an inverted Z-pattern be used on area engagement?** Page 4-20, paragraph 4-16a, FM 23-1, describes the Z-pattern of engagement for area type targets, which is the proper method of engagement for the coaxial machinegun. There is no gunnery crew cut for the use of the proper method of engagement of any of the weapon systems (Z-pattern, burst on target, and the others).

**On the NBC task, must the vehicle button up?** According to ARTEP 7-247-11-MTP, page 5-143, paragraph 1b, all vehicle hatches must be closed during an NBC attack or when operating under NBC conditions.

**Define "bumping up."** "Bumping up" is a USAREUR term used to specify which other weapon system to use if a weapon failure cannot be cleared. The weapon to be used depends on the type of engagement and the target array. On a training

range, it would not be practical to "bump up" to TP-T for a coaxial machinegun failure, since TP-T ammunition will damage and possibly destroy IRETS lift mechanisms. The decision to do so would have to rest with local range control authorities. As for 25mm engagements, if a failure occurs, the logical choice is to use the TOW. On gunnery ranges, however, if a weapon system failure occurs that is not due to crew error, that engagement is considered an "alibi." If the failure is due to crew error, then the crew receives no points for that engagement.

**Will a Bradley commander (BC) get a "crew cut" for not adhering to conditions of the firing task if he fires gunner engagement?** Not if the gunner announces that he "cannot identify" the target. Then the BC can fire a sensing round to aid the gunner in identifying the target. If the gunner still cannot identify the target, proper engagement procedures require the BC to conduct the engagement, according to page 4-4, paragraph f(3), 4-2g(2).

**In the precision fire command, is the range announced prior to execution?** It depends on who announces the range and whether it is announced as an element of the fire command or is a response by the gunner when he determines the range. If the BC intends to use precision fire and knows the range, he includes the known range in his fire command just before the execution element (page 4-1, paragraph 4-1c; page 4-16, table 4-1). If, however, the BC wants the gunner to determine the range, he issues his fire command without a range element, which is the cue for the gunner to determine the range. Once the gunner has determined the range, he announces that range back to the BC as a "common term" (similar to "Identified" and "On the way"). Paragraph 4-3, Precision Fire Command, is confusing and contradicts the above references. This paragraph has been completely revised in the Errata Sheet to FM 23-1. Until the issue is clarified, crew cuts should not be given on the basis of who announces the range, when it is an-

nounced, or whether it is announced.

**If the BC does not give the fire command called for in the conditions of firing task, will he receive a 30-point crew cut?** No. The crew receives a five-point cut for an incorrect fire command (page 10-3, paragraph 10-3a(1)).

**How do Tasks 4 and 6 use two different matrices when the targets are in the same range?** The scoring matrices used on the "TP-T only" tables are the same as those on the AP/TP-T tables. This was done to compensate for the time-of-flight differences between the APDS-T round and the TP-T round. On the "TP-T only" tables, APDS-T engagement ranges were shortened to match the time of flight of the slower TP-T round.

THE BRADLEY'S M242 25mm gun has experienced some malfunctions in the past. An investigation of these malfunctions by the Army Armament, Munitions, and Chemical Command (AMCCOM) has resulted in the establishment of an inspection and repair procedure for the breech assembly.

All M242s must be inspected before being declared mission capable for live fire operations. The presence of Guide Pin Part Number 12524371 in the breech assembly is critical in maintaining proper positioning of the barrel. Damage to the barrel and breech assembly could result if the weapon is fired with the pin missing.

Each crew/operator must now inspect the M242 breech assembly as a part of the preventive maintenance checks and services before operational checks to ensure that the pin is present. If the guide pin is missing, the gun is "not mission capable" and unit maintenance must be notified.

These checks and services are being incorporated into the next revision of TM 9-2350-252-10-2 as well as the semi-annual inspection in TM 9-1005-200-20&P. Organizational maintenance is authorized to remove or replace the guide pin in accordance with TM 9-1005-200-20&P, Change 1,

May 1987. The M242 serial number and total rounds count, and the serial number and rounds count listed for the breech assembly, from the DA Form 2408-4 (Weapon Record Data Card), must be transcribed and provided when requisitioning the replacement pins. If this information is not provided, the requisition will be rejected as "unauthorized."

Points of contact at AMCCOM are Mr. Stevens at AUTOVON 793-2066 or Ms. Rose Goldsby, AUTOVON 793-2108

THE INTEGRATED SIGHT unit on the Bradley's 25mm gun is sometimes damaged during its removal. As a result, the Armament, Munitions, and Chemical Command (AMCCOM) has changed the procedure for removing and installing it (see memorandum, subject: Remove/Install Integrated Sight Unit, TM 9-2350-20-2-3 dated 29 March 1988).

Basically, the procedure requires removing the 12 screws that retain the ISU to the turret, then reinstalling three screws into the lifting holes. The screws are then tightened evenly in the lifting holes to break the ISU seal from the mounting plate. The screws are removed and the lifting device is fastened with shoulder bolts to remove the ISU.

The change in procedure will appear in Change 2 to TM 9-2350-284-2-3 for the Integrated Sight Unit, scheduled to be fielded around April 1989.

The point of contact at AMCCOM is Mr. Ewing, AUTOVON 793-2583.

