

Scrap Metal Recycled Into Tools

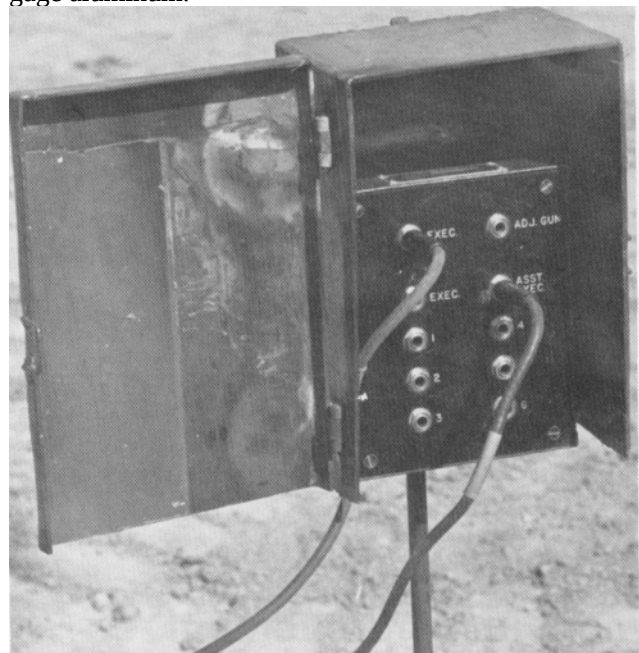
The use of scrap metal is getting a new twist in the Field Artillery Training Center's Self-Propelled Committee. Mr. Leo E. Cortez, a long time welder with the Committee, recently transformed the unit junkpile into a series of innovations which will interest any Redleg who has ever lost a knuckle to a powder cannister, inadvertently conducted voltage from a wet MX155 in inclement weather or, while in training, waited two hours for a five-minute look through an SP-mounted Panoramic Telescope (PanTel).

Made of 1/4-inch steel and measuring approximately 16 inches in length, the "powder cannister lid wrench" releases the commonly-used rubber mallet and screwdriver combination to more appropriate duties. Short, rectangular pieces of steel are welded at one bent end of



Powder cannister lid wrench.

the tool at intervals and angles necessary to facilitate easy rotation of the cannister seal. The opposite end of the piece is ground to a blunt edge and used like a crowbar to break the wire seal and pry the lid off. Now being issued as a regular tool in some units, the wrench should be coated with a non-sparking adhesive or constructed of materiel such as stainless steel or heavy gage aluminum.



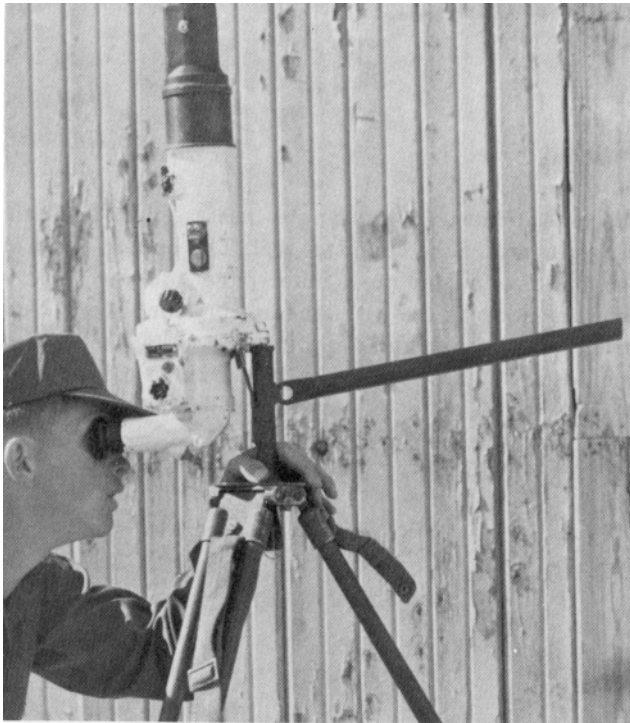
Protective container for MX155.

The "protective container for MX155" is an insulating, box-like device of scrap sheet metal fitted with a hinged and latched cover. The device is internally covered with non-conductive material (such as electric tape) and fitted with a simple hanging bracket for quick installation and removal. A medium length of bar stock, sharpened at one end, is welded along the back to secure the box to the ground. The device itself is open at the bottom to permit ample lead clearance.

The "tripod device" affords a realistic hands-on crew instruction outside the cramped quarters of SP weapons. Utilizing the M117 Pan Tel and normal field tripod, the device mounts the scope through a vertically welded

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section of pipe the size of the Pan Tel's mounting pin. Another small length of pipe, welded at the front of the device, simulates the gun tube angle.



Tripod Device.

The designs of all three devices are currently under developmental consideration. Mr. Cortez's unique recycling campaign encourages similar efforts to convert unit clutter into needed tools and equipment for little or no cost.

Pershing System Modular Improvement

FRANKFURT — The first units of new ground support equipment for the Pershing missile system were recently turned over to B Battery, 3d Battalion, 84th Field Artillery, during ceremonies officiated by COL Samuel Skemp, Pershing Project Manager, US Army Missile Command (MICOM). (See "View from the Blockhouse," November-December 1974 *Journal*.)

Designated the Automatic Reference System/Sequential Launch Adapter (ARS/SLA), the gear represents the latest modular improvement to the Pershing missile system. The ARS eliminates the requirement for launch from pre-selected and surveyed points. The SLA provides for countdown and launch of up to three missiles without uncabing and recabing

after firing. The addition of ARS/SLA, produced by Martin Marietta Aerospace for US and German Pershing units, reduces reaction time and enhances the total effectiveness and survivability of the weapon system.

ARS/SLA underwent final testing for operational readiness with the successful firing of four missiles at White Sands Missile Range, NM, in January 1976. Following evaluation of test results, MICOM officially released the apparatus for tactical use in Europe. The apparatus will eventually be allocated to all US and West German Pershing units.

The equipment is being fielded under the US Army Development and Readiness Command's "Project Hand-Off." LTC William A. Terrio and MAJ Douglas H. Barclay will head the team which will oversee fielding of the equipment and training of Pershing personnel in its use.



Improving reaction time and survivability, the Automatic Reference System/Sequential Launch Adapter represents the latest modular improvement to the Pershing weapon system.

M-31 Mini-ARTEP a la V Corps Arty

Currently, the mini-ARTEP program includes only cannon batteries of the Corps Artillery. Work is in progress, however, to establish mini-ARTEPs for Lance batteries and for all headquarters and service batteries.

The early morning calm is broken by an urgent request for fire which energizes the battery fire direction center (FDC). In a matter of seconds the rounds are on the way. As the last rounds in fire-for-effect are fired, an umpire begins to mark counterbattery fire in the battery position. The battery commander decides to make a hasty displacement to his alternate position. The gun sections lift spades and are off. In short order the unit is in its new location — ready to continue its mission.

The West Range of Fort Sill? Grafenwoehr? Cost in excess of \$100 per round? NO!! This activity is repeated weekly by V Corps Artillery units in local training areas in Germany. The exercise that creates the activity is a corps artillery administered ARTEP based on draft GS ARTEP 6-165 utilizing the M-31, 14.5-mm field artillery trainer. Since the evaluation lasts only 12 hours and is conducted in local training areas using the M-31 trainer, it is called a "mini-ARTEP."

The program was developed under the direction of the V Corps Artillery Commander and initiated on 6 October 1975. The announced intent of the program is twofold: to provide an ongoing training exercise to familiarize units with the changing artillery doctrine and to monitor combat readiness. To insure a high state of readiness, each week one unit is selected from all eligible units to receive a mini-ARTEP. Units are exempt from eligibility-only for the most stringent reasons, i.e., Annual General Inspection, Technical Evaluation Inspections, etc. The unit is provided 24-hour notice and is required to be in the local training area prepared to receive a mini-ARTEP at a predesignated time.

The chief evaluator, provided by the Corps Fire Support Element, is responsible for preparing the scenario and for the overall conduct of the evaluation. The parent group headquarters of the evaluated unit is tasked to provide the other evaluators, drivers, safety personnel and the necessary vehicles and equipment. The following evaluators are currently being utilized: firing battery, fire direction, communications and NBC/aggressor. In addition, all evaluators provide input on the unit's maintenance posture.

The mini-ARTEP begins with an evaluator meeting, followed by a unit in-briefing which sets the tactical situation and the day's activities. The evaluation proceeds as the unit reacts to fire missions, aggressor attacks, NBC attacks and counterbattery fires. The unit receives all fire missions listed in ARTEP 6-165 (appropriate to the type battery) and executes a hasty displacement by day, a deliberate displacement by day and a deliberate displacement by night. After the night displacement and a fire mission, the evaluation is terminated and an oral critique is held for the unit. A written report is prepared by the chief evaluator from



Battery C, 6th Battalion, 9th Field Artillery, fires a high angle mission during a mini-ARTEP.

comments provided by the evaluators and forwarded through command channels.

One might ask whether the mini-ARTEP program is a valuable training tool or just another harassment device invented by higher headquarters. Comments from battery commanders provide the answer:

CPT Gordan Bridgemen, Battery C, 6th Battalion, 9th Field Artillery, said just prior to departing for Grafenwoehr, "I had been a battery commander in Europe for 15 months when the mini-ARTEP program was initiated. It was my observation after two Grafenwoehr trips that our training readiness deteriorated significantly between trips to the Major Training Area (MTA), and that each time we went we had to start all over with basic crew drill. I feel that this year we will arrive at the MTA at the level of training we normally achieve after two to three weeks of intensive training. I feel the mini-ARTEP is directly responsible in that it forced us to utilize the ARTEP as a training guide. The Corps requirement to be prepared to receive an evaluation anytime causes me to spend much more time in the local training area than I normally would have. The mini-ARTEP program has also helped to raise the materiel readiness level in my unit."

CPT Glenn Lackey, Battery Commander, Battery A, 2d Battalion, 92d Field Artillery, upon returning from battery ARTEPs at Grafenwoehr: "When the ARTEP was published all I had was a huge document for a 155-mm direct support artillery unit and I was commanding an 8-inch battery, so all the ARTEP did was confuse me. Upon initiation of the mini-ARTEP, I was forced by higher headquarters to think, train and function ARTEP. Then one day my unit was selected for the mini-ARTEP during which we made our fair share of mistakes. Since I was subject to weekly evaluation, I continued to train, basing my training on the weaknesses discovered during the initial mini-ARTEP. When we

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went to the MTA, I was well prepared for the actual ARTEP. It forced FDC training out of the classroom, as isolated training, and into fully integrated training in the field. An additional benefit of the mini-ARTEP program is that with Corps Artillery administering the evaluation, it forces the groups to be part of the program and, in turn, forces all levels of headquarters to be operating off the same sheet of music. This eliminates a lot of misunderstandings during ARTEPs.

"Since the mini-ARTEP program has been in effect it has caused me to maintain a much higher degree of training proficiency in my unit. Further, materiel readiness is up as you cannot pass an evaluation unless your equipment is in good operating order. In summary, the mini-ARTEP program has provided me with a focal point around which to construct my training program and serves as an excellent tool to motivate my soldiers in all areas of battery operations."

ARTEP requires a high degree of cross training and a thorough comprehension of the mission by each member of the battery. The mini-ARTEP program has been extremely successful in this aspect, as evidenced by the fact that when A Battery, 6th Battalion, 9th Field Artillery, was selected for mini-ARTEP on 25 February 1976, all commissioned officers had previous commitments and were unable to be present for the evaluation. The noncommissioned officers in the unit stepped in, assumed the officer positions and completed the evaluation with outstanding results.

Mini-ARTEP is a viable training device. The program will be continued with increased emphasis on modern battlefield techniques. (CPT William T. Henry, mini-ARTEP chief evaluator.)

New Proximity Fuze

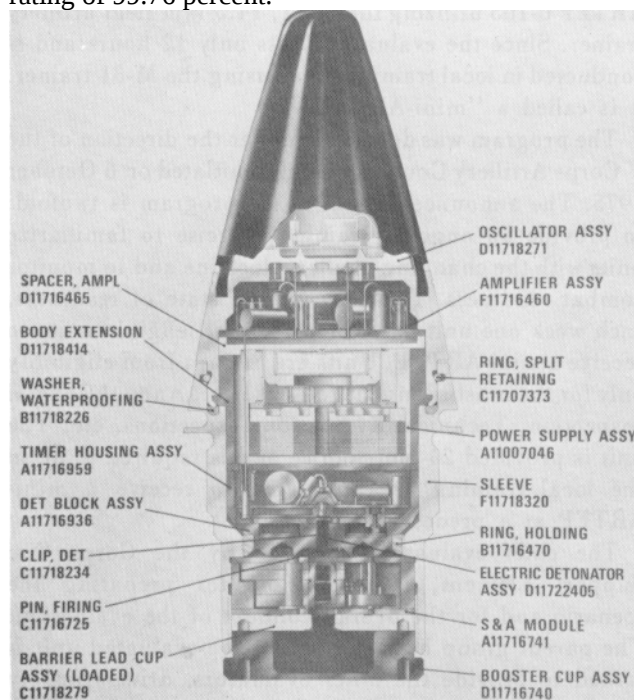
ADELPHI, MD — Unveiling a third generation of proximity firing devices designed by Harry Diamond Labs, the Army has type-classified the recently-developed M732 proximity fuze for high explosive field artillery use. Relative to its veteran predecessors, the M514A3 and M728 proximity fuzes, the M732 offers improved reliability and economy through the successful integration of engineering and materiel innovations.

The depth of projectile intrusion was reduced and standardized to that of point-detonating and mechanical time fuzes, minimizing the previous requirement for deep cavity shells or supplementary charges, and

effecting a cost savings of about 70 cents per round. The dimensions of the fuze were designed to circumvent the present restriction on firing older proximity fuzes at Charge 7 in 105-mm configurations.

Internally, the M732 utilizes a compact safety device to ensure approximately 500 calibers of safe air travel. An electronic arming timer negates the traditional demand for precision mechanical clocks. A mechanical impact element is incorporated to provide an auxiliary anti-dud function in the event of malfunction.

The dependability of the new fuze was well illustrated by the results of a recent series of performance tests. Of 830 rounds fired, 828 functioned (no "earlies") to qualify the M732 for an efficiency rating of 99.76 percent.



Replacing the older M514A3 and M728 proximity fuzes, the M732 achieves 99.76 percent reliability through effective integration of electronic and mechanical components.

FORT POLK — The Leesville Impact Area reeled under the fires of active Army artillery for the first time in 12 years on 3 March 1976. As another step toward the complete reactivation of the 5th Infantry Division (MECH), MG Robert Haldane, Polk Commander, pulled the lanyard which sent the first round downrange from an M109 of Battery B, 2d Battalion, 21st Field Artillery. The ceremony and following fire mission signalled the initiation of an intensive training program which will prepare Polk artillery units for combat ready status.