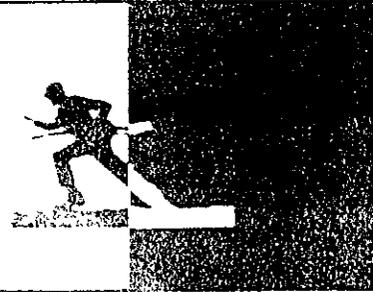


INFANTRY NEWS



THE ARMY's 29th Infantry Division, famed for its D-Day action on Omaha Beach during World War II, was reactivated on 5 October 1985 at Fort Belvoir, Virginia. It is the only National Guard light infantry division.

Like the Active Army's light infantry divisions, the 29th is designed for quick response. About 10,500 troops from Maryland and Virginia National Guard brigades make up the division.

FIELD CIRCULAR 71-4, Combined Arms Live Fire Exercise (CALFEX), was printed in October 1985. It provides complete guidance for the development of live fire, combined arms training and gives the user a thorough list of planning considerations and a detailed formula for the coordination of resources including such factors as ammunition data, target emplacement guidance, and safety diagram procedures. Four sample scenarios are included, as are a sample LOI and control plans.

The circular was distributed to all members of the close combat (heavy) force down to battalion and squadron level. Units and activities that need additional copies may obtain them through the Armor School's Army Wide Training Support warehouse by writing to Commander, U.S. Army Armor Center, ATTN: ATZK-DPT-NRT (AWTS), Fort Knox, KY 40121.

THE ARMY'S Tank-Automotive Command has revised the payload and towing capacities of the commercial utility cargo vehicle (CUCV) and high mobility multipurpose wheeled vehicle (HMMWV) families. The loads may not exceed the limits (in pounds) shown in the accompanying table.

The payload includes any weight placed in or on a truck, including personnel, cargo, equipment, and the shelters on

VEHICLE	PAYLOAD	TOWED LOAD	GROSS VEHICLE WEIGHT
HMMWV Family			
M998 utility truck			
with troop seats	2,081	3,400	7,600
with 4-door soft top	2,247	3,400	7,600
M1038 utility truck			
with troop seats	1,954	3,400	7,600
with 4-door soft top	2,120	3,400	7,600
M1025 armament carrier	2,105	3,400	8,160
M1026 armament carrier	1,978	3,400	8,160
M966 TOW carrier	2,038	3,400	8,160
M1037 shelter carrier	3,126	3,400	8,600
M996 ambulance	1,482	3,400	8,600
M997 ambulance	1,856	3,400	8,600
CUCV Family			
M1008 cargo truck	2,900	3,160	8,600
M1008A1 cargo truck	2,600	3,160	8,600
M1009 utility truck	1,500	1,200	6,775
M1010 ambulance	2,080	N/A	9,555
M1028 shelter carrier	3,600	3,160	9,400
M1028A1 shelter carrier	3,600	3,160	9,400

shelter carriers. Towed loads include the weight of a towed trailer and its payload. Gross vehicle weight is the weight of a truck and its payload.

The M1008, M1008A1, M1028, and M1028A1 vehicles may tow aircraft that weigh up to 15,000 pounds, and the M1009 may tow aircraft up to 10,000 pounds, under special precautions and at

very low speeds.

Overloads are not authorized on CUCVs and HMMWVs. If a planned load exceeds the limits, the vehicle operator must either reduce the amount of equipment to be transported, transfer equipment to a trailer or another vehicle, or use a vehicle with a higher capacity.

THE DIRECTOR OF THE National Infantry Museum has sent us the following news items:

The fifth annual National Infantry Museum Five-Mile Run was held on 12 October. More than 2,000 runners participated. The race, which is supported by both the military and civilian communities, is the Museum's largest source of nonappropriated funds. These funds are used to purchase many important artifacts and "extras" for the Infantryman's museum.

At a ceremony on 5 November, four former members of the 84th Infantry Division (Railsplitters) presented a stained glass replica of the division's patch for hanging in one of the Museum's windows. The four men, all now retired from

the Army, served with the 84th Division during World War II, and presented the replica on behalf of the Railsplitters Association.

This replica brings to 22 the number of brilliant glass panels that hang in the Museum's windows. Dick Grube, the Museum's Director, says there is room for 18 more such panels. For those division associations or friends of the Army who might be interested in donating a panel, experience has shown that the costs run between \$100 and \$200 for each twelve-by-fourteen-inch replica.

On 21 November, Dr. Brooks Kleber, the Army's Assistant Chief of Military History, spoke at the dedication of a monument honoring all U.S. prisoners of war who died in captivity. Dr. Kleber

was a prisoner of the Germans during World War II; he was captured while serving with the 90th Infantry Division. The World War II period monument is a gift from the city of Columbus, Georgia; it was given to Fort Benning when street changes made it necessary to remove it from its original location.

Conservation work for the Museum on two historic flags has been completed by the Rocky Mountain Conservation Center in Denver. They are a 34-star U.S. flag, which was picked up on the battlefield after the fighting ended at Gettysburg in July 1863, and an extremely rare 2d Regiment, U.S. Colored Troops flag, also from the Civil War period.

Major (Retired) Hiram A. Duncan, a former member of the 503d Parachute Infantry Regiment, presented the Museum with the parachute uniform jacket and trousers that he wore on 5 September 1943 when he parachuted into Markham Valley on the island of New Guinea. This was the first combat jump made by U.S. parachutists in the Pacific theater of operations during World War II.

A collection of medals, decorations, and documents that belonged to Major General Charles H. Muir has been given to the Museum by General Muir's family. As commander of the 28th Infantry Division in World War I, General Muir led his men through the Marne fighting in July 1918 as well as in the Aisne-Marne and Meuse-Argonne offensives.

Miss Virginia J. Hanson has donated two World War I mugs to the Museum. The mugs were taken by First Lieutenant Alvin E. Belden of the 123d Infantry Regiment, 31st Infantry Division, when elements of his unit overran a German trench.

An M48 tank and three new artillery pieces have been placed on the Museum's grounds — a U.S. M1887 cannon made at the Springfield Armory; a U.S. M1902 three-inch gun; and a French 75mm gun of the kind that was adopted and used by U.S. forces during World War I.

Other recent acquisitions include a Revolutionary War period musket and bayonet, and a Colt M1873 revolver. A rare palmetto-marked M1842 percussion pistol that was made exclusively for the South Carolina militia just prior to the War Between the States has also been

added to the Museum's weapon collection.

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 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.

THE DIRECTORATE OF COMBAT DEVELOPMENTS has furnished the following news items:

•**Standardization.** In April 1986 the Infantry School will host a meeting of a special group of people who are dedicated to the promotion of standardization in their armies. The group will represent the working elements of the American, British, Canadian, and Australian (ABCA) standardization program.

In general, the tasks for the April 1986 meeting will be to review and confirm previous standardization agreements, originate and draft new agreements, identify new areas for cooperation, develop concepts, and exchange information.

The Infantry School's Commandant will open the session on 21 April, after which the School will hold a variety of infantry briefings and demonstrations and will host several social gatherings.

•**EXFOD.** EXFOD is the Army's acronym for explosive foxhole digger. The initial work on developing methods for digging foxholes by the use of explosives occurred in early 1953. Since then, many concepts and a few devices have materialized, but all have fallen short of the "ideal" EXFOD. The requirement to provide that EXFOD, however, still exists.

Recent infantry, engineer, and material developer actions may well give us an interim device that will be lightweight, quick and easy to operate, and reliable to use in difficult soils found in temperate zones.

•**Small Arms Projects.** The Infantry

School is working on several new projects in the small arms area.

A program to enhance the M16A2 by attaching an optical sight to the rifle is intended to increase the individual soldier's ability to engage targets at ranges of 300 to 600 meters. (See INFANTRY, September-October 1985, page 10.)

Another outgrowth of the M16A2 rifle program, the XM-4 carbine program, is an effort to develop a shortened version of the M16A2. The XM-4 is designed to be used by commanders, drivers, and other soldiers who need more freedom of movement than they have when using the rifle and more firepower than they can get with a pistol.

A third program, on the M60E3, is aimed at reducing the weight of the M60 machinegun from 23.2 pounds to 18.25 pounds, thereby also reducing a gunner's combat load.

Additionally, the Infantry School, working with the John F. Kennedy Special Warfare Center, is developing a new sniper rifle to replace the outmoded M21 system currently in the inventory.

•**Multipurpose Bayonet.** The Infantry School, in conjunction with the Army's Armament Research and Development Center, is aggressively pursuing a multipurpose bayonet that will function as a bayonet, a combat and field knife, and a wire cutter. (See INFANTRY, November-December 1985, page 8.)

This bayonet would be issued to infantry soldiers, to members of divisional engineer units, and to soldiers in special operations forces and would replace the present M7 bayonet and the numerous personal knives, wire cutters, and other such tools that soldiers now carry. It will weigh no more than 1.8 pounds and will be compatible with the M16 series of rifles and the XM-4 carbine.

User testing at Fort Benning is scheduled during the period February to May 1986.

•**JANUS Simulations.** The Infantry School will soon receive the hardware and software necessary to conduct JANUS simulations. JANUS, a computer simulation of the battlefield environment, uses color graphics to represent individual weapon systems (M1 tank, Bradley, TOW, AH64 helicopter) to simulate

combat and weapon effects at a near real time level.

It is supported by a VAX 11/780 minicomputer and software that consists of 20,000 lines of FORTRAN code. JANUS uses digitized terrain provided by the Defense Mapping Agency. The software allows the contour lines to be displayed graphically at a player's workstation, and permits a user to specify both enemy and friendly force structures. A user can also specify the numbers and types of units, weapon systems, and individual infantrymen.

During the simulation, the model computes the line-of-sight and range from an attacking weapon system to its target. Using probability of hit and probability of kill data, which is put into the system at the beginning of the simulation, the software calculates whether or not a target is hit and/or destroyed.

This high resolution computer simulation will allow the Infantry School to simulate changes in equipment and doctrine throughout the combat spectrum and will help considerably in the decision-making process as it relates to equipping and deploying the Army of the future.

THE FOLLOWING NEWS ITEMS were submitted by the President of the Infantry Board:

- **Day/Night Reflex Sight (DNRS).** Since 1980, input the Infantry School has received from the field has indicated a need for a rifle sight system that would permit accurate day and night firing without an active infrared signature such as that which occurs with the infrared aiming light, AN/PAQ-4.

In 1983, the 9th Infantry Division initiated a quick reaction program document to expedite the fielding of a prototype day/night reflex sight (DNRS). The division tested that sight in the summer of 1984. As a result of that testing, the Infantry School judged the concept to be feasible and initiated the procurement of additional DNRS for testing by the Infantry Board.

The DNRS is a passive unity power sighting device, approximately three inches in diameter and six inches in length, with a 40-degree field of view and an illuminated pulsing maltese cross reti-

cle image. Two BA 1567 U (AA size) batteries provide the sight's power. With the batteries installed, the device weighs 21 ounces. When mounted on the M16 rifle, it straddles the carrying handle of the M16A2 rifle, with the sight optics to the left and the electronics to the right of the handle.

Although it is referred to as a day/night sight, the DNRS has no inherent night vision capability; firers must wear night vision goggles to sight on targets by viewing through the DNRS.

The capabilities of an M16A2 rifle equipped with the DNRS were compared with those of an M16A2 rifle with its integral iron sights (day) and equipped with the AN/PAQ-4 (night) during a concept evaluation program test conducted by the Infantry Board in October 1985.

Eighteen soldiers took part in a series of side-by-side comparisons during day and night live fire exercises using single-shot and three-round burst modes of fire to engage E-type silhouette targets at ranges from 50 to 580 meters. During the night firing exercises, the soldiers wore commercial single objective lens night vision goggles to provide their night vision capability.

The visual signatures of the systems were compared during the day and night by data collectors who used their unaided eyes, binoculars, image intensification night vision devices, and thermal viewing devices. Human factors and safety data were also collected during the test.

The test results will be used by the Infantry School to assess the DNRS's potential for future infantry application.

- **Physiological and Psychological Effects of NBC and Extended Operations on Mechanized Crews (Infantry P²NBC²).** With the resurgence of interest in the NBC contamination threat, a new dimension has been added to the survivability of armored vehicle crewmen. The requirement for crews to perform combat tasks for extended periods of time

while encapsulated at various MOPP levels is a critical one. A crewman's survivability is further challenged by the thermal stress that is imposed on him when he must wear chemical protective clothing while operating in warm environments.

Previous research conducted by the Army's Institute for Environmental Medicine and the Army's Human Engineering Laboratory examined the performance of armored vehicle crewmen under simulated NBC conditions for periods up to 12 hours.

In February 1984, the Army's Armor and Engineer Board (USAARENBD) conducted a limited investigation of NBC extended operations during a series of 60-hour exercises using a surrogate research vehicle (SRV). These exercises, conducted in winter without thermal stress, validated the need for further research into the effects extended NBC operations may have on vehicle crewmen.

A collaborative effort in August and September 1984 between the USAARENBD and the Army's Medical Research and Development Command (USAMRDC) assessed the capability of crewmen of M1E1 vehicles to operate in a warm, simulated NBC environment for up to 72 hours. This effort identified a number of endurance-limiting factors that required further investigation. The results also supported a need to conduct similar studies for crewmen in all types of armored vehicles.

During September and October 1985, the Infantry Board, in collaboration with USAMRDC, the Army Research Institute (ARI), the Army's Aeromedical Research Laboratory (ARL), the Walter Reed Army Institute of Research (WRAIR), and the Army Research Institute of Environmental Medicine (ARIEM), conducted a test at Fort Benning of the physiological and psychological effects of NBC and extended operations on mechanized infantry squads (P²NBC²) to assess the performance and endurance of mechanized infantry squads operating under simulated NBC conditions for extended periods. The test, conducted in two phases, addressed performance degradation over time and endurance. (See INFANTRY,

INDEX

The 1985 Index to INFANTRY has been prepared separately and is available to anyone who requests a copy. Please address your request to Editor, INFANTRY Magazine, Box 2005, Fort Benning, GA 31905-0605.

July-August 1985, page 9.)

During Phase IA, four Bradley infantry fighting vehicle (BIFV) squads from the 29th Infantry Regiment took part in a series of repetitive six-hour scenarios throughout a scheduled 72-hour exercise. Each cycle required the squad members to perform selected ARTEP 71-2 tasks under MOPP-4 conditions.

The degree of effort each task required varied from light to moderately heavy exercise. The soldiers also wore instrumentation to monitor heart rate, core temperature, and respiration. During the last 45 minutes of each six-hour cycle, the squads participated in a hasty decontamination exercise and an exchange of MOPP gear. This was the only time the soldiers were permitted to remove their MOPP gear; during this period the soldiers could eat, smoke, or take care of their personal needs.

After three six-hour cycles, the soldiers were allowed to sleep for six hours. Testing was then resumed and continued until a squad was deemed combat ineffective because of personnel losses.

The test soldiers were withdrawn from the test when they neared their medical limits, or when they became functionally or psychologically incapacitated. All of the squads were able to complete 60 hours under the test conditions.

During Phase IB, two BIFV squads from the 29th Infantry Regiment and one M113A1 mechanized infantry squad from the 197th Infantry Brigade took part in the endurance phase of the test. The members of all three squads wore MOPP-4 gear continuously throughout the entire exercise.

The cyclic testing of Phase IA was repeated, without the hasty decontamination event to provide a respite, until the

squads were deemed combat ineffective. Under these conditions, the squads were able to complete 33 to 40 hours.

The test results will be used by the Infantry School to provide input to the Armor School for a draft field circular concerning extended combat operations in a chemically contaminated environment.

HOT WEATHER BATTLE DRESS UNIFORMS will be available for purchase in military clothing sales stores in March 1986 in Central America, Hawaii, Panama, Portugal, and Spain. They should be available in Europe, Japan, Korea, and the United States in April 1986.

New soldiers will begin receiving the uniforms in their clothing bags in February 1986.

SWAP SHOP



Soldiers ought to receive immediate feedback when they fire their weapons. All too often, though, live fire and maneuver ranges do not offer this type of feedback, and the soldier does not really know whether his fires are effective. A little bit of planning can do a great deal to alleviate this problem.

Some simple "kill targets" can be constructed from the following materials:

- 120 feet of rope (old and worn out).
- One snap-link per target.
- Several hundred feet of 550-pound cord or old commo wire.
- Some old clothes.
- Empty MRE boxes.

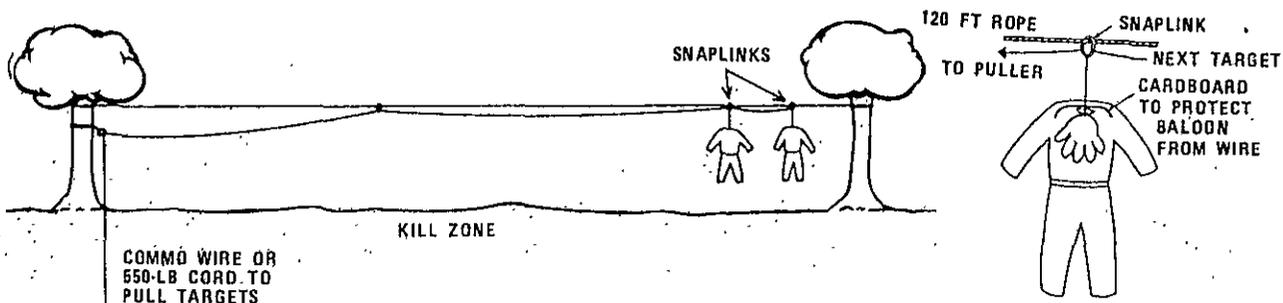
Chicken wire.

Heavy duty balloons or surgical gloves.

First, build a single-rope bridge between two anchors about nine feet above the ground. Then make the dummies out of the chicken wire and dress them in the old clothes. Put PIR/IR in the pocket.

The weight of each dummy will be supported by the inflated balloon or glove as shown in the sketch. When the dummy receives a killing shot, center of mass, the balloon will pop and the dummy will fall to the ground.

These targets can be used for ambush ranges or for other maneuver ranges to simulate fleeing or charging enemy forces. (Moving targets are much harder to "kill.")



(Contributed by Captain Timothy L. Canty, Company B, 1st Battalion, 32d Infantry, Fort Ord.)