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OFFICE, CHIEF OF ARMY FIELD FORCES
Fort Monroe, Virginia

ATTNG-26 350.05/27(DOCI)(9 Dec 53) 9 December 1953

SUBJECT: Dissemination of Combat Information

TO: See distribution

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FOR THE CHIEF OF ARMY FIELD FORCES:

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No 169 thru 212

T. J. Smith

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Asst Adjutant General

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(RESTRICTED) ITEM NO 169

USE OF SD-35 MICROPHONE BY PATROLS. - The use of an SD-35 Microphone, in lieu of the TS-10 Sound-powered Telephone, in conjunction with the amplifying device, has greatly facilitated communications between patrols and the company command posts. It has been successfully used by having the patrol carry the microphone which was connected to an amplifier at the company CP. With the amplification capability, the patrol leader may speak to his CP or other elements in whispers with the least possible chance of being heard by the enemy. The CP simply turns up the volume when wire resistance on distant patrols would normally force the patrol leader to speak louder. The light weight and small size of the microphone is a boon to the patrol leader.

Recommend a further technical study to develop the advantages inherent in this equipment, together with the decided communications advantage for patrols. (Command Report - 180th Inf Regt - Mar 53)

(RESTRICTED) ITEM NO 170

USE OF SNIPERSCOPE ON PATROLS. - For operation during periods of rainfall, the sniperscope has been fitted with a hood arrangement, expediently produced from a poncho. Although the range is decreased during conditions of fog, the limit of visibility is extended approximately twice that obtained by the human eye alone. Charging of batteries has proved no obstacle. In two instances, jeeps were used when the battalion generator was inoperative, and on other occasions, battery charging arrangements have been coordinated with adjacent units. Maintenance has been accomplished at battalion level, and this method should be continued. Spare parts kits are adequate. The weight of the weapon appears to be a relative factor. No adverse comment as to weight characteristic has been received from any patrol member.

This regiment has found from experience that sudden light from flares blows the fuse in the sniperscope. The fuse is so small and hard to reach that it is difficult to accomplish the replacement during the hours of darkness, especially in cold weather. In several instances the fuse could not be replaced and the sniperscope had to be returned to the MLR, causing the loss of this piece of equipment to the patrol.

Recommend that a modification be effected to change the fuse now used to a kick-out type fuse, or a shield or filter be installed over the

lens to block out the direct light rays and prevent the fuse from blowing. (Command Report - 224th Inf Regt - June 53)

(RESTRICTED) ITEM NO 171

USE OF AN INFRA-RED LIGHT WITH SEARCHLIGHT LENS. - It is considered essential to attain a greater vision-range than that presently available with the sniperscope or snooperscope light source. An infra-red light, similar to that presently used on the sniperscope, should be made available for attachment to the 60" searchlight lens and especially to the 18" searchlight presently bracketed for mounting on tanks. Such a device would considerably benefit our forces since patrols could be given long-range night vision without being detected by the enemy; tanks and other weapons could fire on exposed enemy concealed by darkness. (Command Report - 180th Inf Regt - Mar 53)

(RESTRICTED) ITEM NO 172

CLEARING THE DEMILITARIZED ZONE OF UNDERBRUSH PRIOR TO MINE SWEEPING OPERATIONS. - The mission for this unit was to eliminate underbrush so that sapping operations for uncharted mines and booby traps were simplified, thereby lessening the hazard associated with this type of work. The procedure followed was to initially spray the underbrush with a killing solution of DANC and 2 4-D weed killer, in mixture with diesel. Equipment utilized for the spraying was the apparatus, decontaminating, 400 gallon, M3A2. A 24-hour period was usually sufficient to have all areas suitably deadened for subsequent burning. Additional straight diesel was sprayed to complete this burning process. Following the action, engineer mine sweepers and sapper personnel could enter an area with less hazard involved and in many cases were capable of detecting buried mines by sight alone. Engineers supervising mine clearing operations state that by burning off areas, the time element has been reduced by 50%. (Command Report - 21st Cml Decontamination Co - Aug 53)

(RESTRICTED) ITEM NO 173

USE OF MACHINE GUN RING MOUNTS WITH M-SERIES VEHICLES. - Currently authorized .50 caliber machine gun ring mounts will not fit M-series vehicles of 2-1/2-ton size and larger without modification to both the ring mount and vehicle cab. Ring mounts installed without modification set up stresses in vehicular structures which result in

damaged metal parts and glass breakage. Adapters for necessary modifications are available. (Command Report - Eighth Army - June 53)

(RESTRICTED) ITEM NO 174

SPARE TIRE POSITION ON VEHICLE, 5-TON, M-41. - The spare tire on the 5-ton M-41 is entirely too heavy to be attached to the front end of the cargo bed. Two vehicles were found to have developed large cracks and in one case complete severance of the front end from the side panel of the cargo bed. A solution is to either completely remove the spare tire from the vehicle or lay the tire flat in the bed. (Command Report - 75th FA Bn - June 53)

(RESTRICTED) ITEM NO 175

RETRAINING OF DRIVERS ON NEW M-SERIES VEHICLES. - In view of the number of vehicle accidents in units equipped with the new M-series automatic transmission type vehicle, it is apparent that an immediate requirement exists for driver retraining and orientation. Some of the physical differences between the WWII type 2-1/2-ton truck and the M-211 type now in operation are that the M-211 has a more powerful engine, an automatic transmission, improved brakes, and less driver vision to the right. In addition, it is eight inches wider and weighs approximately 1,800 pounds more than the WWII type. (Command Report - I Corps - June 53)

(RESTRICTED) ITEM NO 176

IMPROVISED PROJECTILE RACKS FOR 5-TON M-41 TRUCKS. - Hauling of projectiles by medium and heavy field artillery battalions in the 5-ton M-41 trucks has been improved by use of projectile racks. To prevent shifting of load and damage to rotating bands on projectiles, and to protect the metal floor, a rack of heavy planks is built between the wheel wells.

A field artillery battalion developed a rack which carries 45 8-inch howitzer shells standing upright. The rack has proved rugged and provided effective protection to the truck body. Propellant containers are stacked in the bed of the truck, outside of the rack.

This rack is 16 inches high and extends the length of the wheel wells. The floor of the rack extends all the way to the tail gate. The

rack has its own gate which lifts vertically out of the rack and which is positioned even with the rear of the wheel wells.

Materials used are as follows:

Flooring: 4 each 2" x 10" x 127" planks - 1 each 2" x 8" x 127" planks
Side rails (1 plank on each side): 2 each 3" x 16" x 120"
End walls (1 plank for each end wall): 2 each 3" x 16" x 42"
Vertical supports (2 planks at each corner): 8 each 2" x 10" x 16"
Gate guides (1 each side): 2 each 2" x 4" x 16"
Bolts: 16 each 3/8" x 6" (or 40 each 20d nails)
(Eighth Army Arty Info Bulletin No 4 - 22 Apr 53)

/OCAFF Comment: This is an excellent improvisation provided vehicles are not maintained as special purpose vehicles./

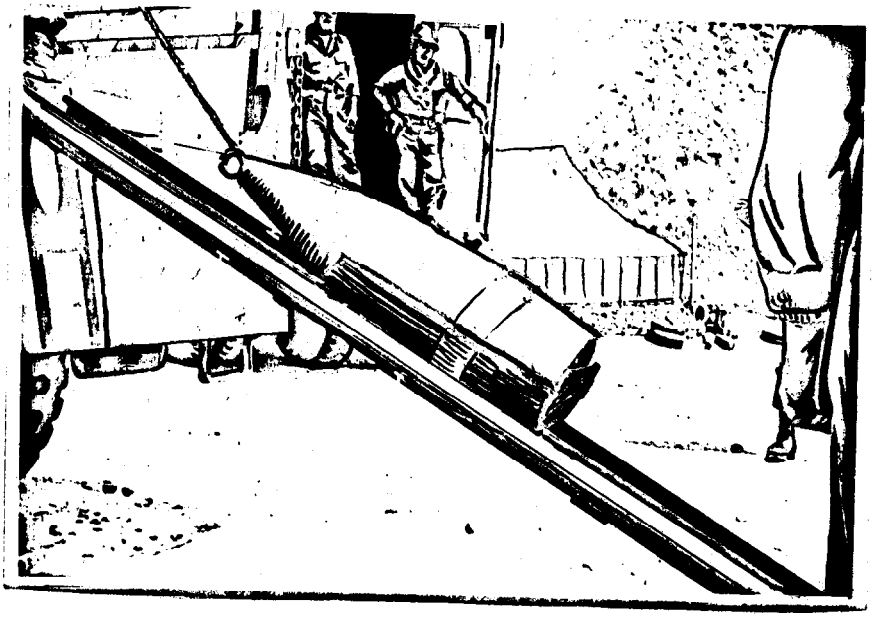
(RESTRICTED) ITEM NO 177

UNLOADING MECHANISM AND HANDLING DEVICE FOR 8-INCH HOWITZER PROJECTILE. - An improvised mechanism for unloading 8-inch projectiles from the bed of trucks and a device for short-distance handling of the projectiles were constructed using miscellaneous materials readily available to any artillery unit. (See photographs.)

The unloading mechanism and handling device materially reduces damage to the rotating bands of the projectiles incurred in handling 8-inch projectiles, thus eliminating a common cause of inaccuracies of fire.

The handling device consists of a 24-inch steel bar with a hook that fits the nose plug on the projectile. This bar permits two men to lift and maneuver the 200-pound projectile instead of only one man.

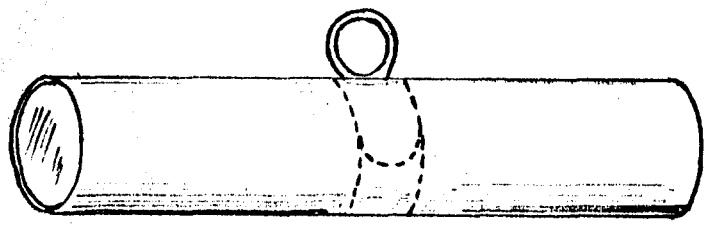
Materials necessary for construction of the unloading device are three 8-foot engineer stakes, one 8-inch charge container, three feet of 3/4-inch round iron (salvage crank), and 14 feet of 3/8 or 1/2-inch rope. The unloading mechanism is constructed to allow the projectile to ride on a slide from the truck or loading platform to the ground and to stand on end when it reaches the ground. The projectile may then be tipped into a loading tray or moved with the handling device. The mechanism can also be used to load projectiles. (Command Report - 987th FA Bn - May 53)



(RESTRICTED) ITEM NO 178

OPENING CAN, FUZE VT, M97. - The metal sealed can which houses the VT Fuze for 105-mm artillery rounds (Fuze M97) has a key that is inserted in a strip that must be unwound to open the can. This opening strip is located near the end of the can. During periods of sustained firing, much time is lost in preparing the VT Fuze. At the present time, pliers are used to remove the opening strip. After the end of the can is removed there is difficulty in removing the fuze.

Recommend that the opening strip for the can, Fuze VT, M97, be placed at the center of the can and that a grasping ring be placed on the end of the strip in order that a finger can be used to remove the strip. (See below.) (Command Report - 64th FA Bn - June 53)



(RESTRICTED) ITEM NO 179

MATERIEL FAILURES OF 240-MM HOWITZER. - Materiel failures of the 240-mm howitzer have been far greater than those experienced with lighter caliber artillery pieces. Specifically, these failures include the following:

a. The clevises giving vertical support to the trail spades break frequently. While it is understood that the spade must be kept perpendicular to the horizontal at all times when firing, occasionally they were not exactly perpendicular. When this deficiency was corrected the clevises continued to break under the stress of firing. Recommend that clevises be constructed of steel rather than cast iron.

b. The hoses leading from the equilibrator tank to the equilibrator cylinder have a tendency to leak with wear. The flexible metal hoses seem incapable of endurance under normal field use. Possibly they could either be constructed of tougher material or replaced by a nonflexible connection. There appears no requirement for flexibility in this connection.

c. Three pieces have been replaced due to faulty recoil mechanisms. This was caused by a leak in the annealed copper gasket sealing the threaded connection of the recoil throttling cylinder with the recoil piston rod. Ordnance specialists indicated that the recoil mechanisms had not been properly exercised since they were placed in storage in 1944; this caused the copper gasket to "channel" and therefore to leak. One of the recoil systems leaked at the front face or muzzle end of the main recoil cylinder. Ordnance attributed this fault to the presence of foreign matter in the recoil cylinder which formed grooves in the piston rings preventing perfect sealing. (Command Report - 159th FA Bn - July 53)

(RESTRICTED) ITEM NO 180

SEARCHLIGHT CONTROL IN CONNECTION WITH ARTILLERY. Experiments were conducted with searchlight control in connection with artillery. Massing, changing the direction of searchlights, and turning different searchlights on and off by reference to map coordinates, searchlight numbers and artillery concentration numbers were tried. The use of artillery concentration numbers was found most effective and confusion or conflict was eliminated with a noticeable gain in speed and accuracy. (Command Report - Eighth Army - May 53)

(RESTRICTED) ITEM NO 181

AMMUNITION HANDLERS NEEDED IN ARMORED FIELD ARTILLERY BATTALION. - Experiences gained in combat with an armored field artillery battalion have shown that for proper cataloging, sorting and inventorying ammunition expended during protracted periods of firing, the present system utilized at battery level does not lend itself to optimum utilization of personnel.

Field Manual 6-140, paragraph 54, states:

> "Duties of Ammunition Sergeant: In charge of ammunition section; maintains ammunition supply as directed; keeps battery ammunition records."

Presently, batteries in the field can accomplish the recording of ammunition and expenditures thereof by obtaining personnel from other sections, thereby decreasing the operating efficiency of the section concerned. No provision has been made to appropriately reward levied

personnel commensurate with duties of battery ammunition handling, other than by depriving other personnel performing T/O&E duties of their ratings.

a. 155 Howitzer batteries are supplied with varied types of ammunition:

(1) Projectiles. - Nine types are manufactured in three weights which must be maintained separately.

(2) Fuzes. - Nine types of fuzes.

(3) Powder. - Two types of powder. Powder is classified by lot number and must be segregated. To insure accurate fire, the same lot number must be fired by all pieces.

b. As is evidenced by the variety of items listed above, maintenance and accounting of large amounts of all types of ammunition presents a problem which has been adequately solved in other field artillery batteries by providing for an ammunition section. In this battalion, each battery has detailed an ammunition sergeant from some other position.

Efficient handling of the ammunition supply of the firing battery requires unceasing effort as well as intelligence and initiative. During recent stabilized operations, much of the loading and handling of ammunition has been done by the wire and survey sections. In a moving situation, these personnel will have other primary jobs and will not be available.

Recommend the following personnel constitute an ammunition section to be added to T/O&E 6-327:

Sergeant, E-5: Ammunition Sergeant.
Corporal, E-4: Ammunition Corporal.
Six, Private First Class, E-3: Ammunition Handlers.

(Command Report - 92d Armored FA Bn - June 53)

(RESTRICTED) ITEM NO 182

ADDITIONAL COMPUTER, MOS 1704, FOR 105-MM HOWITZER FIRING BATTERY. - When operating on a 24-hour schedule, as required in combat, it is necessary to augment the firing battery headquarters with additional personnel to insure continuous alert operations.

Recommend that the T/O&E for the firing battery headquarters be increased to include one additional computer MOS 1704. (Command Report - 10th FA Bn - July 53)

(RESTRICTED) ITEM NO 183

CHANGE TO T/O&E 52-1. - Actual operations under combat conditions have indicated no real requirement for a stenographer in a Corps Chemical Section. There is a critical need for one additional Chemical Staff Specialist. This enlisted man is required for operating radiac instruments, chemical detection equipment, making technical inspections of equipment and CBR defense readiness, and assisting in the training of corps units.

Recommend that T/O&E 52-1, 26 July 1950, as revised by C-1, 30 July 1951, be amended by deleting one Sergeant, Stenographer MOS 1213 (paragraph 16, Line 04 - Change 1) and substituting therefor one Sergeant, Chemical Staff Specialist, MOS 1870. (Command Report - IX Corps - May 53)

(RESTRICTED) ITEM NO 184

PROVEN VALUE OF MAINTAINING COMMUNICATIONS DURING CRITICAL STAGES OF BATTLE. - By approximately 0500 hours, four artillery battalions had displaced from the general area occupied by Battery A of this battalion. The displacements were without order from or knowledge of higher headquarters. Battery A remained in position, continuing to fire, concurrently defending their perimeter with small arms and machine gun fire, inflicting casualties on enemy ground troops. For approximately nine hours Battery A was the most forward battery in the corps sector. Prior to and during the period, they underwent intense attack by enemy artillery, mortar, small arms, and automatic weapons fire.

When ordered to displace by higher headquarters, the battery was extricated, displaced to a new firing position with all major items of equipment, and negligible casualties compared to those suffered by other units.

The key factor which enabled this battery to stay and fight, was the maintenance of communications. Whereas in other units all communications with higher headquarters and with some subordinate units failed at the most critical stage of the battle, communications were maintained by this battalion.

No new techniques or principles have appeared, merely re-emphasis of current doctrine and teaching. (Command Report - 424th FA Bn - July 53)

(RESTRICTED) ITEM NO 185

RELIANCE ON RADIO COMMUNICATION DURING CRITICAL PHASES OF COMBAT. - The experiences of this organization conclusively demonstrated the complete reliance which must be placed upon radio as a means of communication during periods of active combat. Every time this organization has been subjected to extensive artillery fire its wire lines have gone out, particularly those longer, vital lines to OP's, adjacent units, and higher headquarters, even though alternate lines were laid and in many instances these lines were buried. Wire communication cannot be maintained during periods of enemy shelling, or when there is heavy lateral movement of friendly troops and vehicles. (Command Report - 96th FA Bn - July 53)

/OCAFF Comment: When adequate alternate means of communication are properly maintained, there should be no period or interval of time when communication is disrupted./

(RESTRICTED) ITEM NO 186

PERFORMANCE OF NEW SERIES RADIO SETS. - The 39th FA Battalion was issued the new series radio sets, which were mounted in the interim M37 1/4-ton, 24-volt vehicles and in the 3/4-ton, 24-volt vehicles. Results have been satisfactory. The new radio sets out-performed the old sets sufficiently to allow elimination of relay stations. (Command Report - Eighth Army - April 53)

(RESTRICTED) ITEM NO 187

RADIO SET ALIGNMENT. - Many instances of radio sets being out of mechanical alignment have been discovered after approximately two and one-half month usage. The difficulty is caused primarily by the type of rubber shock mounting used in the vehicle installation kit. Also, the suspension of the chassis of the radio component inside the corrugated metal case such as the receiver-transmitter RT 67/GRC, seems to offer trouble in these cases. The chassis strikes against the corrugated case when the vehicle hits a large bump or hole in the road which tends to increase the probability of the set being knocked out of alignment. (Command Report - 159th FA Bn - July 53)

(RESTRICTED) ITEM NO 188

RADIO COMMUNICATION FACILITIES. - It has been found that remoting radios from vehicular mounts into the battery executive post and the battalion FDC is impractical. The impracticability of this practice is due to the fact that an 8-inch howitzer battalion supporting four divisions must be able to communicate on at least eight different frequencies besides the battalion's own frequencies and the corps artillery fire direction frequencies. This large radio communication requirement necessitates five vehicles and these must be taken out of normal use to provide radio communications for fire direction in the battalion headquarters plus one vehicle in each firing battery.

An SCR 608 radio dismounted from the vehicles and operated directly from the FDC permits one operator to handle simultaneously two missions on two different channels without difficulty. This practice is impossible in theory with only one operator if the set were remoted from a vehicle. In practice it is impossible with one operator at the set and one operator at the remote position.

Recommend that the SCR 608 and the AN/VRQ 2 radio mountings be modified similar to the SCR 619 to provide both ground and vehicular installations. (Command Report -17th FA Bn - April 53)

(RESTRICTED) ITEM NO 189

WEAKNESSES OF SWITCHBOARD SB-22. - The new switchboard, SB-22 has the obvious advantage of decreased size and weight but has some deficiencies. The cords (particularly the operator's cord) are apparently too susceptible to wear. Since the operator's cord receives by far the greatest use, it was determined that by completely unrolling this cord and taping it in the fully extended position, wear was greatly reduced and the life of the board correspondingly increased. The ringer crank was also found to be sensitive and required careful handling. (Command Report - 7th Inf Regt - July 53)

(RESTRICTED) ITEM NO 190

DEFICIENCIES IN SWITCHBOARD SB-22. - Initial experience with switchboards SB-22 issued has been disappointing. Two operator's packs and seven line packs were defective and inoperative when received. Other

units (two operator's packs and two line packs) became inoperative during the first three weeks of use. The principal difficulty encountered has been the shorting out of the operator's plug. As the packs went out, it became necessary to utilize telephone EE-8 as an emergency means of operating the boards. Other complaints against the switchboard are the low volume and audibility of the night alarm system and the difficulties encountered in attempting field repairs. (Command Report - 75th FA Bn - Aug 53)

(RESTRICTED) ITEM NO 191

SWITCHBOARD FOR FIRE SUPPORT COORDINATOR WITH INFANTRY BATTALION (ARTILLERY LIAISON OFFICER). - The artillery liaison officer with the infantry battalion acts as the battalion's FSC. In this role his communication set-up must be of the best. In addition to the normal wire lines between him and the artillery battalion FDC, artillery battalion switchboard, and each of his three forward observers, he must have communications with all other fire support agencies involved. These agencies normally include the infantry battalion heavy weapons company, regimental heavy mortar company, tanks in support of the battalion, AA weapons in a ground support role, and the two adjacent artillery liaison officers. It has been found by experience in this battalion that to depend upon already existing wire communications is not practical. During periods of intense combat activity, when the timeliness of fire support is paramount, existing lines are too often tied up with other operational traffic. In order to provide adequate and timely fire support, present doctrine requires each of these fire support agencies to lay a direct line to the infantry battalion FSCC. The equipment presently authorized the liaison section to handle these incoming lines is one emergency switchboard, SB-18/GT. This board contains seven crystals and must be watched at all times as it has a visual signal but no audible signal for incoming calls. This has proven entirely inadequate to handle the wire communication requirements of the artillery liaison officer with the supported infantry battalion.

Recommend that T/O&E 6-126, Headquarters and Headquarters Battery, 105-mm Howitzer Battalion, Towed, be amended to add three switchboards, SB-22/PT (12-drop board), in lieu of the three emergency switchboards, SB-18/GT, listed under the wire section. (Command Report - 10th FA Bn - July 53)

(RESTRICTED) ITEM NO 192

MODIFICATION OF 7 CFM AIR COMPRESSOR, GED. - Experience in transporting the 7 CFM air compressor, GED, M1 or M1A1 by truck, has indicated need for a modification which would prevent the compressor from turning over so easily. The skids (steel) on which the compressor is mounted, being very close together, tends to cause the item to be top heavy. This has been corrected here by spot welding a 1-1/2-inch steel pipe across the skids at each end of the compressor. These two pieces of pipe are four inches longer than the maximum width of the compressor and therefore extend two inches beyond each side.

Recommend the Compressor, Reciprocating, GED, 7 CFM be mounted with the skids the maximum width apart, under the compressor, rather than close together under the center of the weight load. (Command Report - 92d Chemical Service Company - June 53)

(RESTRICTED) ITEM NO 193

DEFICIENCIES IN TRAINING OF TECHNICAL PERSONNEL. - The basic problem confronting a commander of this type unit is the lack of technically qualified personnel. The majority of replacements have earned their MOS through schools, but very few have had any practical work or have any knowledge of type and scope of work they are expected to perform in a unit of this type. Recommend that technical training schools include more practical work periods in their training schedules. (Command Report - 2d Ord Co - June 53)

(RESTRICTED) ITEM NO 194

MAINTENANCE OF H-19 CARGO-TYPE HELICOPTERS. - Hardstand - 1600' x 60' - is required for the parking of H-19 cargo-type helicopters. This hardstand should be as dustproof as possible to prevent the downblast of air from throwing dust, sand or other matter into the mechanism of the helicopter and neighboring helicopters. This is a preventive measure to insure efficient maintenance and a low percentage of grounded helicopters. Experience has shown that the maintenance of this type aircraft on bare sand or dirt has resulted in rapid replacement of very expensive and scarce items on the helicopter. Money saved by this hardstand in maintenance and replacement of expensive parts would soon pay for itself. (Command Report - Eighth Army - December 52)

/OCAFF Comment: Criteria for heliport construction is being established and disseminated by Technical Bulletin 5-250-1, May 1953, "Design Criteria for Army Airfields and Heliports."/

(RESTRICTED) ITEM NO 195

ADJUSTMENT OF AIR DROPPED FLARES. - During the course of the action a request was made by X Corps Artillery to adjust the dropping of flares from aircraft. The desired location of the flares was plotted on the battalion firing chart, azimuth and distance to the flares were given by the OP. These were converted to compass directions and distances and the corrections were relayed through X Corps Artillery FSCC to the flare plane. (Command Report - 780th FA Bn - May 53)

(RESTRICTED) ITEM NO 196

IMPROVEMENTS IN ARMORED VEST. - Maintenance requirements on the M-52 (Marine Type) armored vest have been extremely high due to the plates wearing through the fabric along the bottom of the vest.

Recommend that consideration be given to reinforcing the bottom edge of all vests of this type. (Command Report - 27th Inf Regt - June 53)

(RESTRICTED) ITEM NO 197

NEW GFT TO REPLACE M-50. - Recommend that a study be made to determine and supply a new graphic firing table to replace the present M-50. This table is not suitable for use with the 4.2" mortar, M-30. The current T/O&E 7-14 authorizes the M-30 mortar but authorizes GFT, M-50, formerly used with the M-2 mortar. (Command Report - 27th Inf Regt - June 53)

(RESTRICTED) ITEM NO 198

USE OF M3 SMOKE GENERATORS. - Another successful mission of the mechanical smoke generator in forward areas was demonstrated. Two M3 smoke generators were installed on the reverse slope behind companies E and F to deny the enemy direct observation on work parties constructing communication trenches. Prior to the initiation of this

smoke mission, the enemy had been harassing the work detail with sniper, machine gun, and mortar fire, causing several casualties and damage to materiel. The mission was maintained during daylight hours for two weeks and the construction of the communication trenches was completed without further casualties. (Command Report - 40th Inf Div - May 53)

/OCAFF Comment: Use of equipment provided for deception and concealment should be carefully considered in planning for all operations. Unless such equipment is used wherever possible, our superiority in quality and types of equipment is valueless./

(RESTRICTED) ITEM NO 199

USE OF FLAME THROWERS TO DISPERSE TEAR GAS. - Flame throwers are effective in dispersing tear gas which is used to quell POW disorders. (Command Report - Korean Base Section - June 53)

(RESTRICTED) ITEM NO 200

USE OF CHEMICALS IN POW CONTROL. - Much experience continues to be acquired in the use of non-toxic irritants in the subduing of mass acts of defiance by POW's. A mixture of adamsite and tear gas has proved most effective and more successful than tear gas alone. Indications are that CN in itself is relatively useless in the face of determined opposition, but adamsite, while slow in physiological action, is extremely effective when the cloud is maintained with some persistency. Prisoners have withstood its effects for as long as twelve minutes but invariably are effected by violent vomiting and retching. The possibility of developing a lethal concentration with the CN-DM grenade is almost non-existent.

Sufficient experience has been gained in the use of non-toxic chemicals to recommend that consideration be given to the development of a grenade filled with an agent with characteristics similar to adamsite but capable of more rapid action to achieve the desired result. The time interval between discharge of the present agent and its effect renders it virtually useless as a means of preventing escape.

Indications are that the more times chemicals are used against the same groups, the less effective the chemicals become. Evidence already gathered tends to show that the psychological effect is less when determined,

well-organized POW groups develop anti-chemical tactics to the point where they actually issue clandestine training material on defense against chemical attack. There is also evidence that it is possible to develop a physical resistance to the effects of non-toxic irritants, as prisoners who have previously been subjected to chemical attack require increasingly heavy concentrations to achieve the desired results. (Command Report - POW Comd, 8203d AU - June 53)

/OCAFF Comment: The experience of the POW Command with the use of non-toxic chemicals is confirmed by experience within the Chemical Corps. Physical resistance to non-toxic irritants, particularly tear gas when used repeatedly on the same group of individuals, is built up rather rapidly. Resistance to the more violent non-toxic agents such as DM is not as readily obtained but probably a degree of resistance to this agent is also possible. When individuals who have obtained resistance are left unexposed for a period of time, this resistance disappears and must again be acquired. An equally important effect of continued use of non-toxic chemicals against the same group is the loss of psychological effect, and as that is lost, will to resist on the part of determined rioters increases./

(RESTRICTED) ITEM NO 201

LESSONS LEARNED IN USE OF X-200 NAPALM LAND MINE. - In surveillance tests on components of X-200 napalm land mines, one hundred mines were laid on the ground with burster-well sides in contact with the surface and left exposed to the various extremes of weather conditions experienced from January 1953 through May 1953. It was found that the hot weather in May caused considerable expansion of the napalm filling and that the majority of the mines had swollen, resulting in leakage. The swelling of the mines was a result of filling the mine too full during the cold weather months, leaving insufficient space for hot weather expansion. In several of the mines the expansion of the napalm filling resulted in soaking the X-199 bursters, rendering them ineffective. In every case there was little or no breakdown of the napalm filling. In many of the mines, leakage occurred at points dented or otherwise damaged by rough handling.

Conclusions:

a. Training on X-200 land mines should emphasize careful handling during assembly, transport and emplacement in order to avoid denting or crinkling of the metal containers.

b. When filling X-200 land mines with napalm, regardless of temperature conditions at the time of assembly, a minimum of two inches should be provided to allow for expansion of the filling with the onset of hot weather.

c. After emplacement of X-200 land mines, periodic tests should be made to determine effectiveness of the bursters and the napalm filling of selected mines. (Command Report - 40th Inf Div - May 53)

/OCAFF Comment: For other items on tests of the X-200 napalm land mine, see source 751, inclosure 1 to letter, ATTNG-26 350.05/7 (DOCI)(C)(3 Jun 53), OCAFF, 3 June 1953, subject: "Dissemination of Combat Information," and Item No 82, inclosure 1 to letter, ATTNG-26 350.05/12(DOCI)(C)(1 Oct 53), OCAFF, 1 October 1953, subject: "Dissemination of Combat Information."/

(RESTRICTED) ITEM NO 202

LESSONS LEARNED BY ARTILLERY IN BATTLE OF PORK CHOP HILL. - Radios must be made to work successfully. For several hours during the action on PORK CHOP, a FA battalion was without a single communication line. During this period, the battalion fire direction center, the observation posts, and the infantry FSCC's operated successfully with division artillery and adjacent units by radio.

Infantry battalion FSCC's must remain intact throughout a relief. It is advisable to improve and duplicate the existing installation rather than to attempt to transfer responsibility during the battle.

Responsible liaison officers from every fire support agency must be available to the infantry commander. These officers must be able to communicate with and control respective fire units with the least practicable delay.

Construction of command OP's should be given high priority, for they are vital to any operation, be it of an offensive or defensive nature. Construction should be such that it precludes being shelled out of existence.

The value of direct fire tanks was proved during the evacuation phase of this operation.

Time fuze must be employed in lieu of VT during wet weather to prevent excessive premature bursts over friendly positions.

The close coordination required between the infantry-artillery team with command liaison to all means of fire support cannot be stressed too strongly.

The premature firing of "flash fires" should be avoided whenever possible. If a set pattern is established, the fires may be by-passed or avoided by the attacking enemy forces. (Command Report - 7th Div Arty - July 53)

(RESTRICTED) ITEM NO 203

THE CLOSE DEFENSE OF ARTILLERY POSITIONS. - Several times during the operation, artillery battalions were confronted with the immediate prospect of fighting in close defense of their positions. This situation was aggravated by large numbers of friendly stragglers or fugitives fleeing through or near battery positions.

Recommend that artillery units be practiced frequently in the close defense of the position to include the emplacement of machine guns, rocket launchers and tactical wire. Confidence must be developed in the ability of the artillery to defend their positions.

Plans should be developed for handling stragglers from other units. Such stragglers should not be allowed to flee through or near the battery positions. (Command Report - 5th FA Group - July 53)

(RESTRICTED) ITEM NO 204

NECESSITY FOR HAVING LONG RANGE ARTILLERY WELL FORWARD IN THE DEFENSE. - It was amply demonstrated that some long range artillery (8-inch howitzer or 155-mm gun) must be well forward in the defense. The Air OP reported numerous sightings of infantry in trucks, artillery and other important targets in localities where long range artillery was needed to attack them. (Command Report - 5th FA Group - July 53)

(RESTRICTED) ITEM NO 205

CORRECTING INACCURACIES IN ARTILLERY FIRES. - Experience has indicated that small inaccuracies in fires still result. They are due usually to a failure to observe procedures that are well laid down in our manuals, but in the day in and day out firing they are either slighted or overlooked completely. Some of the more obvious of these are failure to:

a. Keep aiming posts accurately aligned.

b. Set the far aiming post 100 yards from the piece and the near post at exactly one-half the distance to the far post.

c. Bore sight daily.

d. Check laying of battery twice daily.

e. Follow standard procedures to take up lost motion.

f. Make settings exact.

g. Ram hard (projectiles cannot be rammed consistently by using a stroke of medium force).

h. Replace firing charts (grid sheets) that have become inaccurate through long usage or distortion due to weather conditions.

Over an extended period, these small inaccuracies resulting from failure to strictly observe procedures will cause a greater waste of ammunition than large errors because large errors are usually detected early and corrected. (Eighth Army Artillery Info Bulletin No 2 - February 53)

(RESTRICTED) ITEM NO 206

DELETION OF COUNTERMORTAR RADAR SECTION FROM T/O&E 6-125. - Corps countermortar radar sets have been so located in Korea that they cover the entire Corps front. These radar sets have been located more or less permanently in the best available radar sites. Radar sets of direct support battalions are forced to occupy less desirable positions and in many cases move frequently, trying new positions and therefore obtain few mortar locations.

Recommend that the countermortar radar section be deleted from T/O&E 6-125, 15 May 1952 and countermortar radar support be furnished regiments on the line by corps radar sections working in coordination with direct support battalions. (Command Report - 37th FA Bn - Aug 53)

(RESTRICTED) ITEM NO 207

MAINTENANCE OF RADARS IN FIELD ARTILLERY OBSERVATION BATTALION. - Trouble with the PU-26 generators is still common. Radar repairmen, MOS 1775, should be given additional schooling in maintenance of power units in order to be able to repair them. The Signal Corps maintenance teams should each have a generator repairman. In addition, an adequate supply of spare parts for the generators should be included in the running spare parts kit at each site. (Command Report - 235th FA Obsn Bn - July 53)

(RESTRICTED) ITEM NO 208

GENERATOR DIFFICULTIES IN OPERATION OF AN/MPQ-10 RADAR. - Because of the difficulty experienced in maintaining the PU-269/9 generator and the breakdowns in generators caused by normal long hours of operation under combat conditions, recommend that more reliable and sturdy generators be provided. (Command Report - 58th FA Bn - July 53)

(RESTRICTED) ITEM NO 209

PRIME MOVERS FOR AN/MPQ-10 RADARS AND GENERATORS. - At present, there are insufficient prime movers provided to move the radar and the two generators.

Recommend that the T/O&E be increased by one vehicle to provide sufficient transportation. All vehicles in the radar section should be equipped with winches, and block-and-tackle sets and cable pulleys should be provided in order to facilitate entry into position in muddy terrain. (Command Report - 58th FA Bn - July 53)

(RESTRICTED) ITEM NO 210

ORDNANCE TRAINING IN INSPECTION OF SALVAGE BRASS. - Recommend that additional emphasis be placed on proper training in the CONUS of officer personnel in inspection and shipment of salvageable

brass. Since all shipments are inspected at the point of origin and certified by a commissioned officer as being free of explosive material, emphasis in training on 100% inspection at the using point can materially lessen contaminated shipments. (Command Report - Korean Communications Zone - June 53)

(RESTRICTED) ITEM NO 211

DIFFERENT METHOD OF PACKAGING CALCIUM HYPOCHLORITE. - Stacks of calcium hypochlorite on hand at using units are presenting a fire hazard. Two fires have been attributed to spontaneous combustion of calcium hypochlorite which had been exposed to moisture by the deterioration of containers. Instructions have been issued to segregate stocks of this material and store in dry, well ventilated places.

Recommend that packaging methods and materials be studied with a view to correcting deficiencies in containers at the source. (Command Report - Korean Communications Zone - May 53)

(RESTRICTED) ITEM NO 212

PROBLEMS IN UNLOADING BULK CARGO FROM DEEP TANKS IN LIBERTY-TYPE VESSELS. - Bulk cargo such as coal or grain which is loaded mechanically, is normally discharged by hand in Korean ports. Discharge of bulk cargo from deep tanks is a slow and expensive process. This is particularly true of deep tanks in No 4 hold of Liberty-type vessels, because of the small hatch openings, their location which precludes working them simultaneously with the rest of the hold, and their depth and maze of piping.

Recommend that research and development agencies investigate the feasibility of installing a sliding hatch opening near the bottom of the deep tanks on the after bulkhead, leading into the main portion of the hold. It would then be a simple matter, when the main portion of the hatch is nearly completed, to open the panel and let the bulk cargo flow out into the main cargo hatch where it can be worked more easily. (Command Report - 14th Trans Port Bn - April 53)

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