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OFFICE, CHIEF OF ARMY FIELD FORCES
Fort Monroe, Virginia

Reginald W. ...
(8684)

ATTNG-26 350.05/6(DOCI)(C)(18 May 53)

18 May 1953

SUBJECT: Dissemination of Combat Information

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FOR THE CHIEF OF ARMY FIELD FORCES:

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A. B. Chatham
A. B. CHATHAM
Lt Col, AGC
Asst Adjutant General

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SOURCE: Command Report - I Corps Arty
DATE: December 1952 CLASSIFICATION changed to Source No 730

(RESTRICTED) Authority
VT FUZE USED WITH 155-MM AMMUNITION (DEEP CAVITY SHELL). - The 204th FA Bn (155-mm gun SP) test fired the variable time fuze during the month. Subsequent to the test, this fuze has been used on appropriate personnel targets with premature bursts averaging from zero to thirty per cent of the total rounds fired. This percentage of premature bursts is approximately the same as the percentage for the 155-mm howitzer. Results of the test, and the subsequent firing indicate that the VT fuze can be employed effectively with the 155-mm gun.

SOURCE: Command Report - X Corps Arty
DATE: January 1953 CLASSIFICATION changed to Source No 731

(RESTRICTED) Authority
By
PERFORMANCE OF 155-MM DEEP CAVITY SHELL WITH FUZE M96 (T76E9). - The 145th FA Bn completed a combat test of deep cavity shell for 155-mm gun with fuze M96 (T76E9); the purpose of the test was to determine the performance data on the projectile using both normal and super charge.

One hundred sixty-eight rounds were fired using super charge with the following results:

- 26 rds graze
- 99 rds air
- 39 rds dud
- 4 rds premature

Three of the premature rounds occurred nine seconds after firing; one occurred five seconds before the expected time of detonation.

INCLOSURE

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One hundred twenty-one rounds were fired using normal charge with the following results:

5 rds	graze
77 rds	air
37 rds	dud
2 rds	premature

Both premature bursts occurred nine seconds after firing.

The average height of burst of normal air bursts was 30 yards. Many rounds sensed as duds may have been lost because of the rugged terrain. The number of duds increased sharply when left in warm tubes for any appreciable length of time prior to firing.

SOURCE: Command Report - Eighth Army

DATE: November 1952

Source No 732

(RESTRICTED)

INTERIM-TYPE VEHICLES. - During a six-month test period, 2-1/2-ton trucks were driven a total of 1,084,000 miles with the M34 averaging 4.37 miles per gallon of gasoline with an average load of six tons while the M135 was recorded at 3.7 miles per gallon with an average load of four tons. Testing units were universally favorable in their comments upon performance of the M37 3/4-ton truck, and were similarly critical in their reports on the M38 1/4-ton. Primary deficiency in the latter vehicle appeared to be inadequate power. This shortcoming apparently has been overcome in the M38A1.

(RESTRICTED)

USE OF ONE-TON TRAILERS IN KOREA. - The use of one-ton trailers by one of Eighth Army's transportation truck companies points out the following:

a. The average driver is inexperienced in manipulating a truck-trailer combination.

b. Approximately 25 per cent more tonnage can be transported by using the trailers.

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c. The one-ton trailer must be more rigidly constructed for continuous use on rough roads.

d. Trucks used to pull trailers require more maintenance, particularly on clutches and engines.

e. Because of the additional time required to load and unload trailers, the line haul must be 30 or more miles in distance.

f. Use of trailers increases gasoline consumption approximately 30 per cent.

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FLAK SUPPRESSION. - The thirty-day program of flak suppression authorized all friendly artillery, except VT fused, to fire while close support strikes by fighter-bomber aircraft were in progress. In addition, friendly artillery fired flak suppression missions on all known enemy anti-aircraft gun positions in the target area using VT fused artillery, just prior to the fighter-bomber strikes, and continued the flak suppression with all types of artillery, except VT fused, while the fighter-bombers were attacking the target. The results of this experiment were highly successful and have been jointly approved by FAFIK and EUSAK for implementation across the entire front. Henceforth, artillery will maintain fire, including high angle fire, on targets being attacked from the air. The only exception is that the use of VT fused projectiles will be suspended within a radius of 3000 yards of the target during an air strike.

(RESTRICTED)

ACCIDENTS IN USE OF PORTABLE FLAME THROWER. - A number of accidents occurred in connection with operation of the portable flame thrower. These accidents were caused either by using the wrong kind of gas in pressurizing the flame throwers, or by allowing water to freeze in the pressure regulator. If oxygen rather than carbon dioxide or air is used, explosions will occur often. When water freezes in the pressure regulator, pressure within the fuel tanks may exceed the safety limit and cause rupture of the tanks.

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SOURCE: Command Report - 75th FA Bn

DATE: October 1952

Source No 733

(RESTRICTED)

IOCAFF EVALUATION: This is an example of improper use of artillery and unnecessary expenditure of ammunition. I

"STANDING GUARD" WITH ARTILLERY. - Considerable quantities of ammunition were expended by this battalion and the organic division artillery battalions during the early stages of the operations because of the requirement to keep a continuous curtain of defensive fires in front of friendly infantry during the hours of darkness whether the enemy was attacking or not. Fires were placed on avenues of approach and batteries fired "continuous fire, battery right at 20-second interval," without varying the range or deflection settings. On one occasion, a battery of this battalion "stood guard with 155's" firing one such barrage from about 2200 to 2400 hours. A battery of the 31st Field Artillery Battalion (155-mm howitzer) picked up the same barrage, fired at the proper interval after the last round of this battalion was on the way, and continued the barrage until 0400 hours when one of the light battalions took up the firing. While the results of such use of artillery cannot be evaluated with the facts available, it appears that, aside from the large expenditures of ammunition and the resultant wear and tear on materiel, it is tactically unsound as it sets a pattern of time and place of firing which an alert enemy can quickly determine and avoid.

SOURCE: Command Report - 987th Armored FA Bn

DATE: September 1952

Source No 734

(RESTRICTED)

USE OF MODIFIED 105-MM HOWITZER. - Approximately 75% of the fires of the battalion were high-angle fire. No difficulties were experienced using the modified 105-mm howitzer, self-propelled, M7 (with well). Frequent shifting of the carriage is necessary because of the limited traverse at high angles.

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SOURCE: Command Report - 15th FA Bn

DATE: November 1952

Source No 735

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ORGANIZATION OF FSCC IN INFANTRY BATTALION. - In each of the infantry battalion command posts, there is located a fire support coordination center, which consists of the artillery liaison officer, the infantry battalion assistant S3, representatives from the regimental tank company, quad 50's, 81-mm and 4.2-inch mortars. Here are located direct lines to the artillery and other infantry supporting weapons.

The FSCC at the infantry battalion level has proven highly successful. It provides the coordination that is needed between the infantry and its supporting weapons. In addition, it provides the artillery S2 with more information-collecting agencies than he would ordinarily have at his disposal. In order to properly process shell reports, sound azimuths and other target-getting reports received from infantry battalion and regimental OP's, this battalion's survey section has undertaken the task of surveying those OP's so that they may be accurately located on the S2 countermortar chart.

(RESTRICTED)

COUNTERFIRE ORGANIZATION. - The supported regiment's counterfire platoon has located its command post in the artillery battalion fire direction center, so that the azimuths that they obtain may be plotted on the S2 countermortar chart as quickly as possible. Many times, hostile mortar and artillery have been located by the intersection of azimuths obtained from several sources.

Countermortar radar maintains direct wire and radio communications with this battalion. At the first report of hostile mortar activity, radar is notified to go on the air in the desired grid squares, thus providing many targets which would otherwise go unlocated.

During the past month, I Corps directed that each company of each infantry regiment, and each battery of each artillery battalion establish shell-reporting teams consisting of one officer and three enlisted men. The mission of a shell-reporting team is to make crater analysis of all incoming rounds so that complete and accurate shell reports may be

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obtained. The S2 Section of this battalion undertook the task of training teams for both the supported regiment and this battalion. Each team was required to attend a two-hour class that incorporated practical work in crater analysis and shell reporting. Since that time, the number of shell reports received from the infantry has increased.

(RESTRICTED)

ARTILLERY FIRE CONTROL. - Tests conducted by this unit have revealed the following:

a. Range deflection fans are warped and replacement items are not available. Sudden changes in weather cause contraction and expansion of range deflection fans, introducing error into the data sent to the howitzers.

b. Grid sheets issued for surveyed firing charts are of a poor quality, and errors of four hundred meters in ten thousand meters often exist.

c. These grid sheets shrink and stretch, depending on the weather, humidity, and amount of use.

In order to compensate for this error and improve firing, the following changes were introduced:

a. New firing charts were prepared as prescribed in FM 6-40, Chapter 12, and each deflection index was labeled with the appropriate deflection.

b. Range deflection fan - all numbering and lettering with grease pencil was omitted.

c. Deflection fan was always placed on the right side of the plotted target when reading deflections. Deflections were read from the left side of the fan only.

As a result of these simple changes, the accuracy of the fires of this unit improved considerably, and a large per cent of the errors due to nonstandard equipment have been either eliminated and/or standardized and compensated for by registration. Following are advantages resulting from these changes:

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a. Five hundred mil error by the horizontal control operator was completely eliminated.

b. Error introduced by shrinkage or stretching of charts and contraction or expansion of range deflection fans was compensated for by reading all deflections from one side of the range deflection fan and registration. This would not be true if deflections were read from both sides of the fan, as the correction would have to be applied in the opposite direction, depending upon which side of the fan deflection was read.

c. The width of the plotting pin is also compensated for in the same manner as b above.

The only disadvantage resulting from these changes is that a good horizontal control operator is slowed down by always having to place the fan on the right of the plotted target and reading deflections without numbers on the fan. The increased accuracy more than compensates for this slow-down in obtaining chart data.

SOURCE: Command Report - 73d Tank Bn

DATE: October 1952

Source No 736

(RESTRICTED)

TANK BN TRANSPORTATION REQUIREMENTS. - It was definitely proven that the tank battalion, infantry division, equipped with the M46 tank, needs more trucks in its supply platoon. The consumption of gasoline by the M46 tank and the mass and weight of ammunition required by this tank is far more than that of a battalion equipped with the M4E8 tank. During this period, the tanks of this unit were employed on an extremely wide front, all at the same time. This is not an unusual situation as the tank battalion, infantry division, can be expected to be so employed. As a result this places an added burden on the supply platoon. In a moving situation the supply system of the battalion would have broken down for the want of transportation.

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SIGNAL SHOP TRUCK FOR TANK BATTALION. - The tank battalion, infantry division, has a definite need for some type of vehicle for maintenance of communications equipment. The battalion has a total of 191 radios, all of which require second echelon repair and maintenance. Due to the lack of qualified personnel with knowledge of tank radios in the infantry division signal company, it is often necessary to perform third echelon maintenance. In addition, the tank interphone system presents problems that require maintenance at the tank which can not be done at the battalion communications maintenance installation.

The variety of radio equipment in the unit requires the use of many types of test equipment. Much of this equipment is very delicate and the present authorized transportation does not allow this equipment to be centralized or carried properly for utilization under field conditions. Also there is a need for a place to set up test mounts for the SCR 506 and the SCR 508.

The tank battalion, infantry division, in many cases finds itself committed over a wide front which places a burden on the line companies to bring equipment needing repair to the battalion headquarters area. If the battalion communications section had a shop truck that could move from company to company and repair radios and intercommunications systems, the maintenance could be performed quickly and efficiently. Communication is essential in fighting with combined arms teams, and anything that will improve the maintenance of communications will also improve the over-all capabilities of these teams.

Recommend that one shop truck, 2-1/2-ton, 6x6, General Repair Signal Corps M30 or M31, be included in T/O&E for headquarters and service company, tank battalion, infantry division.

SOURCE: Command Report - 17th FA Bn

DATE: November 1952

Source No 737

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8-INCH HOWITZER GFT MODIFICATION. - The Artillery School produced and issued a GFT (Extension FT8-J-2 Special, 1 Oct 52) for

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8-inch howitzers in order to cover the areas in the higher reaches of the ranges not normally covered on the standard GFT. This GFT functions adequately during the summer months. The window is too small for use during the winter months because of the large range K. Recommend that all GFT's be made with the window large enough to be able to place the adjusted elevation gage line on it. Range K of 2000 to 2500 yards can be anticipated.

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BATTERY CHARGING EQUIPMENT. - Several instances of radio communication failure have occurred within the past month due to insufficient battery charging equipment. The T/O&E power unit PE 210 does not have sufficient capacity to charge the batteries necessary to operate T/O&E radios without continuous operation. Continuous operation results in short life of the equipment, necessitating evacuation from the theater for repairs and a delay of from two to three months for a replacement issue. The tank heater generator, Model HRU 28, has an output one and two-thirds times as great as the PE 210 and can be repaired by Ordnance third and fourth echelon installations within the theater. Recommend that the PE 210 be replaced by the tank heater generator, Model HRU 28, an Ordnance item.

SOURCE: Command Report - 17th FA Bn

DATE: December 1952

Source No 738

(RESTRICTED)

DIFFICULTIES WITH M4 TRACTOR. - The M4 tractor, having insufficient traction has great difficulty maneuvering howitzers over normally simple terrain when the ground is frozen. Tracks slip and slide on frozen slopes even in the absence of snow and ice. Due to these difficulties, recommend that rubber treads be issued during the winter months for the M4 tractor, or that the M4 be replaced by a better tractor.

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SOURCE: Command Report - 245th Tank Bn

DATE: December 1952

Source No 739

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TANK GROUSERS. - The installation of a wedge-shaped grouser to the head of the center guide bolt at the rate of nine grousers per track proved to be a valuable aid in traversing ice coated roads and mountains. However, the grouser does cause excessive wear to shock absorbers and makes it difficult to turn at slow speeds; also, some can be expected to break off when on rocky or frozen ground.

SOURCE: Command Report - 48th FA Bn

DATE: October 1952

Source No 740

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AVOIDING FIRE BROUGHT ON BY RADIO FIXES. - It was reported by the FO's who were in the assault that, whenever they began transmitting on their radios, they would shortly thereafter receive concentrated enemy mortar fire on their positions. To counteract the enemy's ability to fix the positions of friendly radios, two subterfuges were employed. One was to remote all radios, placing the radios on reverse slopes revetted as much as practicable; and the other was to set up salvaged radio antennas in nonoccupied areas to draw fire away from occupied areas. These two subterfuges resulted in immediate lessening of fire on the FO's and their parties in their observation sites. Most of the FO parties were exposed and in the open due to the necessity for observing and the difficulty of digging in.

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SOURCE: Command Report - 89th Tank Bn

DATE: November 1952

Source No 741

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LOGS USED IN TANK FIRING. - A log cutting program has been instituted to provide each tank position with sufficient logs to corduroy the tank firing and back-up positions. This was done to cut down to an absolute minimum the possibility of having the tank tracks freeze to the ground during quick freezes.

SOURCE: Command Report - 1st FA Obsn Bn

DATE: November 1952

Source No 742

(RESTRICTED)

RADIOSONDE AN/AMT-2A. - Operational difficulties were encountered during the month with balloons and radiosondes AN/AMT-2A. The Metro Section had three balloon breaks. These balloons were conditioned before inflation. Cost of the balloons and expended charges was \$113.76. Eight radiosondes AN/AMT-2A failed during flight. All of the radiosondes released were prepared and checked before release as set out in TM 20-240. The cost of eight radioonde flights, less batteries, is \$520.16. The following chart indicates the type of trouble encountered with the AN/AMT-2A:

Trouble

Probable Cause

- | | |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Transmitted only temperature after 30th contact. | Leaky anaroid capsule. |
| 2. No signal after release. | Large frequency shift at release.
Release was smooth and normal. |
| 3. Temperature and humidity signal received simultaneously after 30 contacts. | Acted as though both temperature and humidity elements were in grid circuit of blocking oscillator at same time. A layer of heavy moisture |

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Trouble

Probable Cause

- was present at that altitude. Could possibly have shorted across the relay.
4. Same as No 3. This flight, launched immediately after No 3, developed the same trouble. Acted identically to No 3 and at the same altitude.
5. No temperature signal. The circuit in which the temperature element lives, obviously became open. The most likely place is at the element. Could have been jarred open at release, but release was normal.
6. Entire signal stopped at 15 contacts. Bad battery.
7. Entire signal stopped at 25 contacts. Bad battery.
8. No temperature after 35 contacts. As in No 5, the circuit opened. Most likely place is at the element. No explanation for it to open at that altitude.

All other signals were perfect.

SOURCE: Command Report - 378th Engr Combat Bn

DATE: November 1952

Source No 743

(RESTRICTED)

REPLACEMENT OF MISSING TEETH. - We are continually confronted with the problem of arranging for the replacement of missing teeth with prosthetic appliances for many individuals who present such cases. Since such treatment is beyond the scope of this clinic, we must depend on the cooperation of other units capable of rendering such

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service. Such units are more than willing to cooperate, but due to the frequent movement of the units, many cases cannot be carried to satisfactory completion. More effort should be made to render dental service within the Zone of Interior, where facilities are more readily available, before individuals are transferred to the Combat Zone. Examination of every replacement reporting into the battalion reveals that a considerable percentage of these men have had very little, if any, previous dental treatment.

(RESTRICTED)

DEFICIENCY OF AUSTIN-WESTERN GRADER. - There have been numerous deficiencies noted in the Austin-Western grader during this period. The most troublesome was the problem of evacuation over mountainous roads when it was deadlined with engine trouble. All steering, brakes, and lifting mechanisms work off a hydraulic system; thus when the engine ceases to operate it becomes practically impossible to move it, especially when the roads are of such a nature that a lowboy cannot be brought to the area. Recommend that the deficiency in the Austin-Western grader be corrected by the development of a tow bar or an alternate steering and brake system to be used only in emergencies.

(RESTRICTED)

TRUCK-MOUNTED 210 CFM AIR COMPRESSOR. - Breakage of inner cooler pipes on truck-mounted 210 cfm air compressors has caused a considerable loss of operation hours. This breakage is due to vibration. Recommend that a brace or alternate inner cooler pipe be installed at the factory.

(RESTRICTED)

MAINTENANCE OF EQUIPMENT IN COLD WEATHER. - Freezing temperatures have emphasized the importance of complete servicing and first echelon maintenance of engineer equipment. Mud and dirt freezes to idler wheels, tracks and other moving parts, thereby placing excess strain and stress on assemblies when used with this frozen crust on the assemblies. It must all be removed at regular intervals during the working day.

Emphasis must be placed on first and second echelon maintenance on Ordnance vehicles since equipment used on this project is subject to

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the most severe conditions -- 20 degrees below zero weather, steep grades, and poor road surface conditions. Because of the cold, operators will become lax when the need for maintenance is greatest, thus requiring closer supervision.

SOURCE: Command Report - 2d Inf Div

DATE: December 1952

Source No 744

(RESTRICTED)

SALVAGE. - Twenty-five thousand 105-mm brass cartridge cases and fifty tons of .50 caliber brass were salvaged. Under a new Army directive which demands the stringent accounting of all expended ammunition components, additional administrative difficulties were encountered in drawing replenishment stocks of ammunition for the division. Although all salvageable components must be returned through supply channels for reuse, a one for one trade of expended for new is impracticable unless transportation and other factors beyond division control are taken into consideration. The availability of transportation and the exact timing of return rail shipments of salvage sometimes makes the physical exchange of round for round impossible although new ammunition is badly needed. Certificates that salvage has been rail loaded and shipped must be accepted by ASP's in such instances. Failure of the supporting ammunition group to accept this fact caused a dangerous reduction in division stocks during December.

(RESTRICTED)

WARRANT OFFICER, UNIT ADMINISTRATOR. - Personnel eligible for appointment as warrant officer, unit administrator, are only those who are obtained from certain combat military occupational specialty sources. Enlisted personnel who are specialists in one of the fields of unit administrator duties are barred from appointment solely on the basis that they do not occupy a source position.

As the Adjutant General is the monitoring agency for unit administrator warrant officers, and the duties of the warrant officers lie primarily in the administrative and technical fields of company level units, some of the most logical sources for unit administrators are not being used.

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The additional source positions concerned which appear in the T/O&E of an infantry division are listed below:

<u>ENL SSN</u>	<u>MOS</u>	<u>Grade E-7 & E-6 Auth in T/O&E 7 15 May 52</u>
1290	Personnel Management Supervisor	19
1502	Administrative Specialist	28
1585	First Sergeant, Administrative	10
1816	Personnel Administrative Supervisor	3
1821	Unit Supply Specialist	132
1824	Mess Steward	106
	TOTAL	<u>298</u>

In view of the critical shortage of unit administrators and the lack of eligible personnel who desire warrant officer appointments, recommend that a study be initiated to investigate the feasibility and possibility of securing authority to draw on the sources listed above for appointment of additional warrant officers, unit administrators.

SOURCE: Command Report - 19th Engr Combat Gp

DATE: November 1952

Source No 745

(RESTRICTED)

ARTILLERY PROPELLANT. - In recent months large quantities of engineer explosives have been consumed in operations, particularly in rock blasting for new roads. The occasional short supply of these explosives, as well as considerations of economy, has suggested the use of surplus artillery propellants. Consequently, a series of controlled tests were made to determine the most satisfactory techniques for using this propellant as an engineer explosive. Tests were specifically designed to learn the following: Optimum method of priming and boosting propellant powder; optimum placement of such primer in the powder charge; feasibility of springing rock holes; and effort-yield relationships for varying charges. Limited data already available indicates the desirability of priming with an electric cap, boosted with composition C3, and placed near the top of a bore hole.

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SOURCE: Command Report - 229th Ord Base Depot

DATE: November 1952

Source No 746

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MODIFICATION OF 4.2-INCH MORTAR, M30. - Eighth Army has experienced difficulty in the bridge breaking on the Mount M24 used with the 4.2-inch Mortar, M30, and has requested twenty-four bridges be modified by strapping reinforcement of the bridge. This modification will be made on all mortars of this type which are on hand.

SOURCE: Command Report - 2d Cml Mortar Bn

DATE: September 1952

Source No 747

(RESTRICTED)

MECHANICAL DIFFICULTY WITH 4.2-INCH MORTARS, M30. - Four 4.2-inch mortars, M30, were out of action due to cracked bridges. One by one, the Allen screws worked themselves loose even after being counter punched by Ordnance personnel. The battalion fired the M30 mortars until the loosening of the Allen screws, along with the cracked bridges, forced the mortars out of action. The bridges are breaking and cracking just to the rear of the bearings for the standard trunnions and in front of the swivel on the bridge.

SOURCE: Command Report - X Corps

DATE: October 1952

Source No 748

(RESTRICTED)

ORDER-OF-BATTLE SPECIALIST TRAINING. - Order-of-battle specialists trained at Fort Riley, Kansas, are not receiving instruction in CCF and NK order-of-battle. This results in a long period of on-the-job training at unit level. Personnel trained at Camp Palmer, Japan, receive this type of instruction.

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Recommend that order-of-battle specialists assigned to combat units receive instruction in CCF and NK order-of-battle.

SOURCE: Command Report - Sig Svc Bn (VHF), 8189th AU

DATE: December 1952

Source No 749

(RESTRICTED)

EFFICIENCY IN MAINTENANCE OF SIGNAL EQUIPMENT. - Each operating transmitter and receiver is allowed to operate for not more than 72 consecutive hours, and is then replaced with spare equipment which has previously been thoroughly checked, cleaned and properly aligned on an operating frequency. The equipment taken out of service is then given complete first echelon maintenance, realigned on the proper frequency and placed in spare status, ready for immediate use when an emergency arises or when the operating equipment has been in continuous service for 72 hours. A very close study has been maintained by the battalion maintenance section to determine the effects of this program. This section reports that, over a period of 60 days, the number of repairs made on receivers and transmitters in the battalion maintenance shop has decreased by 60%, and that this decrease is the direct result of changing the equipment at least once every 72 hours.

Recommend that this practice or one of similar nature be placed in effect wherever this type of equipment is being used for continuous operations.

SOURCE: Command Report - Eighth Army

DATE: July 1952

Source No 750

(RESTRICTED)

MATERIALS-HANDLING EQUIPMENT AND ACCESSORIES
DEFICIENCIES. - Some difficulty is being experienced in operating Ross fork lift equipment in Korea because of basic construction. The Ross is built high and narrow with a central steering wheel which, in effect, makes it a tricycle with the two wide wheels forward. This tends to make the vehicle unstable on rough terrain. Particularly is this true of the

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15,000 pound and 18,000 pound end items. An added disadvantage exists in the very low gear ratio on the steering wheel. While this makes for ease in turning, it requires the operator to turn the steering wheel approximately five complete turns to turn the vehicle 90°.

The steering shaft, constructed of tubular metal, on the Clark Yardlift, Model 150, should be strengthened. It has been necessary to use threaded steel bars to replace tubular steel construction in an effort to reduce deadlines.

The clutch discs on the Clark Yardlift, Model 60, are wearing out too rapidly. The tensile strength of the springs is not distributed evenly, or possibly the thickness of the clutch disc can be at fault. In addition, its maneuverability on rough terrain is unsatisfactory due to the small steering wheel.

In order to improve the efficiency of the Clark Panel Loader, 3,500 pounds, Model 51, the hose should be coupled to the hydraulic lift cylinder in such a manner as to eliminate all possibility of contact between the hose and the drive shaft.

On all lift cylinders, excessive replacement of packing is being encountered. Research should be conducted to provide a packing which will withstand the abrasive action of dust and mud which grinds into the packing.

A constant problem exists wherein rocks become embedded between the dual rubber tires on this equipment and cause excessive wear and tear. This problem also exists on Ordnance vehicles; thus far, no satisfactory solution has been found. The use of a detachable rubber strip of guard which could be mounted between the dual tires by attachment to the inner rims of the dual wheels has been advanced as a possible solution.

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