[redacted] UNCLASSIFIED III

OFFICE, CHIEF OF ARMY FIELD FORCES
Fort Monroe, Virginia

ATTNG-26 350.05/56(DOCI)(C)(29 Aug 52) 29 August 1952

SUBJECT: Dissemination of Combat Information

LIBRARY
ARMY WAR COLLEGE
PERIODICALS SECTION
SEP 26 1952
COPY 1

TO: See distribution

LIBRARY
SEP 1 N 1952
ARMY WAR COLLEGE

1. In accordance with SR 525-85-5, Processing of Combat Information, the inclosed EXTRACTS are forwarded to Department of the Army, Army Field Forces and the service schools for evaluation and necessary action. It may be appropriate, in certain cases, for these agencies to take action upon a single extracted item; in others, it may be desirable to develop a cross-section of accumulated extracts on a particular subject before initiating action; and often, the extracted item serves to reaffirm our doctrines and techniques.

2. Copies are furnished to other military agencies to keep them informed concerning theater problems from the front line through the logistical command.

3. These EXTRACTS are derived from reports which are classified SECRET. For the greater convenience of the user, this Office downgrades each extended item to the lowest classification compatible with security. No effort is made to paraphrase or delete any portion of the extracted remarks, so that none of the original intent is lost.

4. Combat information EXTRACTS herein which are applicable to training at the company-battery level also appear in Army Field Forces TRAINING BULLETINS.

FOR THE CHIEF OF ARMY FIELD FORCES:

DECLASSIFIED BY AUTHORITY OF
TAGO 760924 ON
1976 BY Peters

1 Incl
Extracts from sources
440 thru 455

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

DISTRIBUTION:
(Over)

CN 26635

UNCLASSIFIED [redacted]

AWC log # 52-9-87

DISTRIBUTION:

3	ACOFS, G-1, DA
3	ACOFS, G-2, DA
15	ACOFS, G-3, DA
20	ACOFS, G-4, DA
2	The Adjutant General
2	Chief of Chaplains
10	Chief Chemical Officer
10	Chief of Engineers
2	Chief of Finance
2	Chief of Information
2	The Inspector General
2	The Judge Advocate General
2	Chief of Military History
2	Chief, National Guard Bureau
10	Chief of Ordnance
2	The Provost Marshal General
10	The Quartermaster General
2	Executive for Reserve and ROTC Affairs
10	Chief Signal Officer
10	The Surgeon General
4	Chief of Transportation
	Comdt
2	The Armored School
2	The Artillery School
2	The Infantry School
2	Army War College
2	CGSC
2	Army General School
2	Asst Comdt, The Artillery School, AA&GM Branch
1 ea	Pres, AFF Boards
1	CO, Arctic Test Branch
1 ea	Chiefs, AFF Human Research Units No 1 and 2

Copies furnished:

70	TAG (10 ea CINC's and CG's, Major Oversea Commands)
	CG's
2 ea	Continental Armies
4	Army AA Command
2	Military District of Washington
2	Tactical Air Command
2	Chief of Naval Operations, Dept of the Navy
1	CO, Mountain & Cold Weather Tng Command
2	Chief, Army Advisory Gp, Air Command and Staff School, Air University
2	Comdt of Cadets, US Military Academy
	Comdt
2	Armed Forces Staff College
2	Marine Corps School
2	USAF Air-Ground Operations School
2	Counter Intelligence Corps School
2	The Provost Marshal General's School
1	Officer in Charge, Atlantic Fleet Intelligence Cen, Attn: Ground Forces Officer

SOURCE: Command Report - 223d Infantry Regiment

DATE: March 1952 Source No 440

(RESTRICTED)

FINDING WIRE LINE BREAKS. - The oscillator, built by the Radio Section, has proven extremely helpful in finding a line break with minimum difficulty and time. When wire is out, the switchboard operator plugs the oscillator into that particular jack. A lineman in checking the line will hear the oscillator tone. When he no longer hears the tone, he has the break bracketed.

SOURCE: Command Report - 40th Inf Div Arty

DATE: April 1952 Source No 441

(CONFIDENTIAL)

PREPARATION FOR ATOMIC ATTACK. - This Headquarters was one of those selected to participate in "Exercise MUSHROOM," a program designed to determine the capability of a unit engaged in operations against an enemy to prepare installations adequate for passive defense against atomic bombing; to familiarize personnel with the effects of atomic weapons and the means of defense against them; and to dispel the fear of atomic attack by education.

Construction of shelters to include adequate overhead cover for all vital installations, roof high walls and revetments for nonvital installations, and suitable shelters providing all-round and overhead protection for all personnel was undertaken, and the entire project completed on 30 April. Although the exercise was successfully completed within the time prescribed and current tactical and administrative functions were conducted without impairment, it is obvious that an installation as elaborate as this would not be possible in a fast moving situation nor under conditions less static than the present.

A solution, when threatened by atomic attack, would be to assign high priority to construction of, first, the minimum vital installations and, secondly, the necessary personnel shelters and to continue less vital construction as time and the tactical situation permit.

A portion of the final statistics on the exercise follows:

Man-hours required	13,797
Sandbags used	56,384
Logs used	3,278 (average 6" x 16')
Steel pickets used	574
Bulldozer operator	111 hours

It is apparent that construction of a complete defensive installation affords excellent training opportunities, and in many cases has permitted the demonstration of noteworthy examples of ingenuity.

In keeping with the design of the installation to permit operations during or immediately following an atomic attack, it was necessary to install all wire circuits underground. Ditches were dug to cover all local wire lines as well as incoming and outgoing lines: the switchboard was placed in a bunker and all wire heads placed underground. The radio stations were placed underground with only the antenna exposed, and a remote relay station established one and one half miles from the FSCC.

Maintenance of wire circuits required 891 man-hours during the period exclusive of the special requirements of Exercise MUSHROOM.

SOURCE: Command Report - I US Corps

DATE: January 1952 Source No 442

(RESTRICTED)

BATTLEFIELD ILLUMINATION. - 5-gallon flare. This expedient consists of a 5-gallon lubricating oil can filled with 6% napalm; and M15 incendiary grenade, WP; prima cord; and two electric blasting caps, No 8. Put the 5-gallon oil can (filled with 4-1/2 gal napalm) in a hole which permits the can to protrude approximately 2 inches above the ground level. Wind single strand of prima cord inside the lip of the 5-gallon oil can with one end free; attach to this loose end a No 8 electric blasting cap. Remove the fuze from the M15 Incendiary grenade, WP and insert a No 8 electric blasting cap into the fuze well in the grenade. Secure the blasting cap to the grenade by making a half-hitch around the grenade with the wire attached to the blasting cap. Secure the grenade and blasting cap to the 5-gallon oil can carrying handle with wire. Join one end of the

wire from the blasting cap in the grenade to one end of the wire of the blasting cap that is attached to the prima cord. Attach the remaining two wires to the double strand detonating wire. When connected with W130 detonating wire and battery BA70 or 10-cap blasting machine as an electrical source, the munition is ready for detonation. This expedient will burn approximately 30 minutes and will illuminate an area 50 yards in diameter.

Other suitable containers utilizing the procedure outlined above include: Signal Corps, Spiral Wire, No 4 Can; Chemical Corps, Chloride of Lime Can; 60-mm mortar shell cans.

These flares should be emplaced a minimum of 100 yards forward of the MLR so as to silhouette enemy troops and not blind friendly groups.

(RESTRICTED)

DEMONSTRATION OF VT OVER BUNKERS AND TANKS. - A firing demonstration was presented by the 3d Infantry Division to show the negative effect of VT fuze against personnel in tanks and bunkers. Purpose was to emphasize that our own fires can be brought down on our own troops when the enemy storms our positions. This permits us to remain in our positions. It is felt that a similar exercise should be added to the battle indoctrination on courses used in training in the United States.

(CONFIDENTIAL)

TANK FINAL DRIVE OUTPUT SHAFTS. - Two experimental type final drive output shafts are to be field tested in the near future by the 64th Tank Battalion. Four M46 tanks having the new type output shafts were issued to the 3d Division 30 January for field testing by this tank battalion.

Two tanks have output shafts which have been "shot peened." This process compresses the molecular structure of the shaft which should make it more resistant to fatigue cracks which usually radiate inward from the outside splined surfaces.

The remaining two tanks have hollow output shafts. A hole one-inch in diameter has been drilled in the center of the shaft to a depth of 18 inches. This shaft is being tested on the theory that hollow shafts will have more torque which should reduce the failures of this unit.

The 64th Tank Battalion is to give the tanks normal Korean usage and perform routine preventive maintenance of them. Records on length of time operated and distance travelled are to be kept by the battalion. Monthly inspections are to

be pulled by the 703d Ordnance Company (3d Div). This includes tearing down the final drive assemblies and inspecting the shafts for indications of fatigue cracks or failures.

Output shaft failures have been one of the major troubles experienced with M46 tanks operating in the Korean theater.

SOURCE: Command Report I US Corps

DATE: February 1952 Source No 443

(CONFIDENTIAL)

MAINTENANCE AND OPERATION OF M46 TANK. - The following points about maintenance, and operation of the M46 tank are presented for information:

1. Final drive gear teeth shear or break.

2. Final drive output shafts develop radial cracks and shear. Replacement output shafts are received without the output shaft spacers. These spacers are a press fit and it is virtually impossible for using units to remove the spacers from broken output shafts without damaging the spacers. Replacement output shafts complete with spacers should arrive at the units.

3. Master junction boxes fail to operate because of sticking reverse current relays, sticking circuit breakers, and burning out of ballast bulbs.

4. Muffler exhaust pipe clamps break because of the intense heat to which they are subjected. When clamps break, flames escape from muffler pipes and increases danger of engine fires.

5. Gas tanks develop cracks along one or more of their too numerous seams.

6. Track center guides are too narrow, too pointed, and too short to prevent thrown tracks on rough or hilly terrain.

7. Auxiliary generators develop rod and piston failures particularly during cold weather. In static situations the auxiliary generator is run a great deal to keep the battery charged. Since the speed of the auxiliary

generator is governor controlled, it speeds up to the governor RPM upon starting and takes over the load of the main generator. This high initial RPM is hard on a cold engine. It is recommended that a hand throttle be installed on the auxiliary generator to keep down the RPM during the warm up period.

(CONFIDENTIAL)

COMPARISON OF CENTURIAN III AND M46.

POWER

CENTURIAN III. - Engines are considered good but not powerful enough for the weight of the tank; however, it has been noted that this tank does have a good cruising speed on hard surface roads and has been able to climb steep hills.

M46. - The power of the engine is adequate to propel the tank at relatively high speeds on flat or gently rolling terrain. When climbing steep hills or when towing another M46 tank the power of the engine is not fully utilized because of the gear ratio in the final drive and slippage in the transmission.

MOBILITY

CENTURIAN III.

1. The tank has adequate speed on flat or gently rolling terrain.

2. The hill climbing ability of the tank is excellent.

3. The tank has forded water approximately 4 feet deep. Rice paddies with mud 10 inches deep were easily traversed. Four tanks were seen to maneuver over an earth dyke with a vertical face 4 feet high. The top of the dyke was 7 feet wide with a gully 2 feet deep running through the middle. The far side of the dyke was approximately 12 feet high with a 65° slope leading into a soft rice paddy 10 inches deep. The four tanks in trace negotiated this obstacle with no difficulty.

4. The tank makes gradual turns as compared with the sharp abrupt turns of which the M46 tank is capable.

5. The Centurian III Tank has safely traversed the US M2 Treadway Bridge; however, because of the weight of the tank, the safety factor for the bridge has been materially reduced. When a Centurian III crosses a pontoon bridge, the bridge almost submerges.

Over

M46.

1. The tank has considerable speed on flat or gently rolling terrain.

2. The tank has climbed hills approximately 30°; however, when negotiating turns on steep slopes all the power is diverted to one track which then spins in place. It is then necessary to back the tank in a direction tangent to the turn and then start uphill in the direction of the turn.

3. When climbing long steep hills the transmission tends to overheat. The transmission is cooled by braking the tank and running the engine for a few minutes.

4. Neutral steer for pivoting the tank in place is seldom used because it places a severe strain on final drives and output shafts and tends to cause thrown tracks.

5. Traction is fair on muddy hills, in rice paddies or in heavy muddy ground. Traction would be improved if the per-square-inch ground pressure were decreased and if the track blocks had deeper chevrons.

6. Tracks are thrown easily when traversing lateral slopes. The center guides of the track are considered to be too narrow and too pointed for securing the tracks.

ARMOR PROTECTION

CENTURIAN III. - Unknown but believed to be good.

M46. - See page 13, TM 9-718, April 1951.

FUEL ECONOMY

CENTURIAN III.

1. Unknown but reportedly by a British Officer to compare favorably with the M46 tank.

M46.

1. Approximately 3 gallons per mile under average conditions.

2. Because of cold weather warm up periods and maneuvering over hilly and difficult terrain average gasoline consumption is approximately 4 gallons per mile.

3. Because of relatively high rate of fuel consumption, the range of tank operation is limited for extensive operations. Refueling requirements for tank units are high and must be carefully planned and anticipated.

EASE OF MAINTENANCE

CENTURIAN III.

1. To replace a bogie wheel, the bogie wheel rocker arm is raised by a hydraulic jack applied from underneath the tank. This method is slower than the standard US method of removing bogie wheels.

2. The tracks are hard to break due to the difficulty in removing the track pin. To expedite maintenance on the track it has been broken by cutting it with an acetylene torch or breaking it by using small demolition charges.

M46.

1. In general, testing the main engine or replacing certain accessories to the main engine are best accomplished by removing the engine from its compartment and making the necessary repairs while the engine is on the ground. It takes an average crew about 3/4 of an hour to remove the engine and about one hour to replace the engine. Removal and replacement of the engine requires a wrecker truck.

2. The main engine must be removed to replace the following accessories of the main engine: bevel gears in the oil cooler fan assembly, fan shaft of the oil cooler fan assembly, lower magneto on the lower left hand side of the engine compartment, intake manifold clamps on the side next to oil cooler radiators, oil lines leading from the bottom of the oil cooler radiators along the bottom of the engine to the oil filter, and the transmission.

3. The following maintenance can be accomplished quicker by removing the engine: changing the main engine generator, 100 hour checks, and changing or adjustment of carburetors.

4. Spark plugs can be best changed by removing the heavy steel grill work from the back deck of the tank.

5. After engines are removed they are tested by "ground hopping." If the engine is defective and requires repair by Ordnance, the engine must be reinstalled, the tank delivered to Ordnance, and then Ordnance must repeat the process of removing the engine before effecting repairs.

MECHANICAL RELIABILITY

CENTURIAN III. - Based on the tank deadline rates, the Centurian III Tank appears to be as mechanically reliable as the M46 tank.

M46.

1. In general, the tank is not mechanically reliable; however, the mechanical unreliability can be pinpointed to the following features: final drives, output shafts, oil cooler fan assemblies, and master junction boxes.

2. Final drive gear teeth shear or break.

3. Output shafts develop radial cracks and eventually shear. It is believed that this shaft is under designed in strength.

4. Oil cooler fan assemblies are the most unreliable assembly of the tank. The parts of the oil cooler fan assembly which frequently fail are the shafts, magnetic clutches, and beveled gears. Oil cooler fan assembly failures if not promptly detected cause overheating and damage to the main engine and transmission.

5. Master junction boxes fail frequently. It is believed that the junction box is too complicated and controls too many of the electrical features of the tank. The chief failures in the junction box are sticking reverse current relays, sticking circuit breakers and burning out of ballast bulbs.

ENGINE

CENTURIAN III. - Unknown

M46. - The engine is the most reliable major assembly of the tank.

TRANSMISSION

CENTURIAN III. - Unknown.

M46.

1. The transmission by itself is generally reliable; however, it tends to overheat when climbing steep hills or when towing other M46 tanks. The transmission quickly overheats when an oil cooler fan assembly becomes inoperative. This overheating burns out a babbit bearing in the transmission.

2. When the shift linkage is out of adjustment slippage and wear of transmission bands occur because the transmission is trying to drive in more than one gear at a time.

3. Leaking oil seals are a moderately recurring defect in the transmission.

EASE OF HANDLING

CENTURIAN III. - The tank is reported to handle very well. Turns are relatively long and gradual.

M46.

1. The manual control driving lever makes driving of the tank easy and simple. New drivers learn to drive the tank in a relatively short time.

2. The dual driving controls in the assistant drivers compartment are not necessary. Because of the simplified driving control the driver is not subject to extreme driver fatigue and, therefore, assistant driver controls are not needed.

FIRE POWER

CENTURIAN III.

1. The tank cannon is considered an excellent antitank weapon. It is very effective as an artillery weapon against personnel and bunkers.

2. Lack of a bow machine gun reduces the effectiveness of the tank for close in fighting. This defect can be partially overcome by mounting .30 Cal machine guns on the tank commanders cupola.

3. The life of the tube is reported to be approximately 100 rounds.

M46.

1. The 90-mm cannon is considered an excellent weapon against all types of targets.

2. The coaxial machine gun, antiaircraft machine gun, and bow machine gun furnish excellent small arms fire support for close in and distant firing.

(CONFIDENTIAL) UNCLASSIFIED

FLAIL TANK.

1. A conference was held in Tokyo on 31 January to decide the mechanical details to be incorporated in flail tanks to be constructed by the Engineers Rebuild Depot of JLC.

2. The following mechanical modifications will be tried and incorporated in the flail tank:

a. An auxiliary engine with a fluid transmission. It is expected that the fluid transmission will be effective in absorbing and countering any reverse rotation which might occur when the flail drum is caused to rotate in reverse direction upon detonation of a mine.

b. Reverse type worm gears will be used to transfer power from drive shaft to flail drums. This type gear can absorb some reverse motion if blast causes flail drum to rotate in reverse.

c. Disc-type clutches will be used on ends of flail drum. The discs will slip if drum rotates in reverse thus helping absorb the reverse drum motion along with the reverse type worm gears and fluid transmission of auxiliary motor

d. A prestone high pressure cooling system will be used in auxiliary motors to handle expected high operating temperatures.

e. Auxiliary motor will use two air cleaners because of excessive dust caused by the flail.

f. The flail drum will rotate forward so that flail chains detonate mines in front of the flails. Opposite rotation of drum would have caused mine detonation between the flail and the tank which was considered unsatisfactory.

g. The flail is to be designed to carry 5-pound pear shaped weights at end of flail chains.

h. Round tubing will be used if available to mount the flail drum on tank hull. The tubing will be mounted on the tank hull rather than on the tank suspension. This will allow repairs to the tank suspension system without interference from the flail attachments. It was also believed that circular tubing would be less susceptable than box-type beams to damage from mine blasts.

UNCLASSIFIED

i. Recoil springs of 155 guns will be used to absorb shock when flail system is blown upward by mine blast.

j. Fuel for the auxiliary motor will be piped from main fuel tanks of vehicle.

k. Disc-type wire cutters will be placed on both ends of flail drum to cut barbed wire and telephone wire which may wind up on the drum.

l. The flail drum will be built one foot wider on each end than the width of the M4A3E8 tank.

m. The M4A3E8 tank instead of the M-46 will be used to mount the flail.

n. The representatives of JLC estimated that the first flail tank would be completed in one month after necessary material was assembled. Subsequent flail tanks would follow at the rate of one a week.

(RESTRICTED)

FIELD EXPEDIENT BRIDGE LAYING TANK. - At the request of I Corps G3 steps were taken to develop a bridge laying tank. Such a tank would be used during an advance to cross blown bridges, or AT ditches. During WW II a bridge laying tank had been developed from the old M31 recovery tank. Present plans were to adopt the M32 recovery tank to lay standard engineer M2 steel treadway and it was decided to build a steel adapter for the M32 recovery tank. This adapter would be designed to fit and be secured by steel pins to the two front lifting hooks and the two front towing shackles of the tank. With this pin arrangement the adapter could be easily removed when the tank was not needed for laying a bridge. The purpose of the adapter was to serve as the rear support for the forked ends of the steel treadway when the bridge was in the carrying position.

To provide stability to the bridging when being carried by the tank an 8" I beam was bolted across the treadways approximately seven (7) feet from the forward end of the treadways. On the center of this I beam was welded a lifting hook to which was attached the winch cable of the tank for lifting the bridge. For use of the bridge carrying tank during a tactical operation it was agreed that the winch cable would have to be attached to the lifting hook by means of a quick release clevice or pin. The clevice or pin would be released by pulling on a string or wire from inside the tank. Thus it would be unnecessary for any crew member to dismount to release the winch cable while the bridge was being laid in position. The treadway spacer bars were modified

so that they could be pinned securely at each end to the steel treadway; however, it was agreed that this modification was not necessary.

The plans called for the M32 recovery tank to lift and carry twenty-four feet of double track M2 steel treadway. Because of the weight of the bridging (about 5 tons) and the leverage exerted on the boom the front bogie steel volute springs compressed considerable and the back end of the tank raised slightly and the rear end of the tracks lost firm contact with the ground. To prevent damage to the volute springs, standard plates were bolted to volute spring housing to prevent complete compression and failure of the volute springs. The tendency of the rear end of the tracks to raise off the ground was more pronounced when the tank was going down hill or into depressions. This tendency places the entire weight on the front part of the track and increases the per-square-inch ground pressure of that part of the track in contact with the ground; therefore, it is believed that the tank carrying the bridging would bog down in soft ground. However, the tank could carry the bridging on fairly level and firm roads.

To make the tank more maneuverable, experiments were conducted with the tank carrying twenty-four feet of single track steel treadway. The twenty-four feet of single track treadway was mounted with the rear forked ends in the center of the steel adapter. The front end of the treadway was lifted by attaching the winch cable to a chain fastened to the treadway at a point about seven feet from the front end of the treadway. With the load to be carried thus cut in half, the tank became more stable and maneuverable and the entire tank track remained in firmer contact with the ground. With training and experience a crew should be able to carry and place separately, across a ditch or blown bridge, the two separate twenty-four foot sections of the steel treadway. Training will enable the tank crew to space the two treadways so that an M4A3E8 or M46 tank can fit on and cross the bridge.

Although no work was done on carrying or placing the center planking for the treadway it was agreed and deemed advisable to have engineer troops prepared and ready to install center planking on the bridge so that all types of vehicles could cross the bridge.

CONCLUSIONS

1. An M32 recovery tank equipped with an adapter can carry and lay across a gap twenty-four feet of double track M2 steel treadway. The ground must be fairly firm due to high ground pressure on the forward end of the tank tracks.

2. An M32 recovery tank can carry and lay separately, two single track sections of M2 steel treadway each section being twenty-four feet long.

3. A recovery tank of the weight and size of an M46 tank could carry, with more facility than an M32 recovery tank, twenty-four feet of double track M2 steel treadway.

(RESTRICTED)

INFANTRY-TANK COMMUNICATION. - Undue reliance must not be placed on the SCR 300 radio for Infantry-Tank Communication. Alternate means of communication must be provided. A 510 radio accompanying the infantry could provide direct and alternate means of communication with the tanks.

(RESTRICTED)

RADIO T/O&E CHANGE, MP COMPANY.

1. Radio equipment currently authorized by T/O&E 19-37, for the most part, (SCR 610 and SCR 619) is inadequate because:

a. Limited range in miles. The road net now patrolled extends well over one hundred and fifty miles.

b. All roads in the area are extremely rough, making it impossible to keep the SCR 610 and SCR 619 in alignment. It is normal to have a radio fail after less than an hour on the road, although several hours may have been spent getting the radio into operation.

c. The excessive amount of maintenance required in keeping the SCR 610 and SCR 619 in alignment and adjustment limits their availability for use and ties up unit and higher echelon repair facilities.

2. In view of the above, it is requested that the eleven SCR-610 and the six SCR-619 currently on hand in this organization be replaced by Radio Set AN/GRC-9 and the 622d Military Police Company be authorized to draw an additional six AN/GRC-9's for installation in those patrol vehicles not now authorized any communications equipment.

3. Approval of the request contained in paragraph 3 above would authorize the 622d MP Company to have a total of twenty-eight AN/GRC-9's. Since the company already has authorization for five AN/GRC-9's all twenty-eight patrol vehicles would be similarly equipped with a radio which has already proven its dependability in this organization.

(CONFIDENTIAL)

FAILURE OF OIL COOLER FAN ASSEMBLY ON M46 TANK.

1. The principal cause for deadlined M46 tanks in units of this headquarters is failure of parts of the oil cooler fan assembly.

2. Contrary to the report to GHQ Ordnance Officer by Mr F. Blair, Technical Representative of Allison Division GMC, and Mr L. Cass, Technical Representative of Continental Motors Corp, failures are also occuring in the oil cooler fan assembly of the M46A1 tank.

3. As an example of the large number of failures of the oil cooler fan assembly, the following figures are quoted:

UNIT	Number of Failures	NOV	DEC	JAN
64th Tank Battalion		23	22	32
73d Tank Battalion		16	27	35

4. The parts of the oil cooler fan assembly which fail most frequently are the magnetic clutches, fan shafts, and beveled gears.

5. It is the considered opinion of staff officers and the using units of this headquarters that the present performance and design of the oil cooler fan assembly for the M46 and M46A1 tanks are unsatisfactory.

6. It is recommended that:

a. Urgent steps be taken to redesign the present oil cooler fan assembly and that redesigned assemblies be shipped promptly to Korea.

b. That steps be taken to insure an adequate supply for Korea of the principal parts of the oil cooler fan assembly now in use.

(RESTRICTED)

2-INCH CHEVRON BLOCKS AS TRACK GROUSERS. - It was finally decided that spacing 2-inch steel chevron blocks every fourth block into a regular steel track offered the best solution to the problem of more traction. The battalion was issued two complete sets of T-80E4 steel tracks with 2-inch chevrons. The tracks were taken apart and the track blocks were spaced into the regular steel tracks. The battalion reports that the 2-inch chevrons serve as track grousers and the traction has been materially increased. It was pointed out, however, that the 2-inch chevron blocks do cause a vibration in the suspension system if the tank is driven on a hard surface road.

(CONFIDENTIAL)

IMPROVING HILL-CLIMBING ABILITY OF M46 TANK. - The following notes, for improvement of the hill climbing ability of the M46 tank, are recommended:

1. Final Drive.

a. The final drive gears should be geared lower to give greater driving power but at slower speeds. The present final drive gear ratio gives the tank speed on flat or gently rolling terrain but does not give ideal or maximum power for climbing hills.

b. Final drive gears have sheared or stripped while climbing hills or making turns in rough terrain. A lower final drive gear ratio as mentioned in paragraph a above and stronger final drive gears are recommended.

c. The output shafts of the final drive develop radial cracks and shear. The output shaft has been known to shear when the tank is climbing a hill or rolling along a level road. It is virtually impossible to drive the tank if one of the output shafts breaks. The exact cause for failure of the output shaft is not known. A stronger output shaft is recommended.

2. Tracks.

a. The track blocks should have chevrons 2" deep. A 2-inch chevron will dig or scoop deeper into the ground and give better traction. About five sets of 2-inch chevron tracks have been received to date. Units are disassembling these tracks and spacing individual blocks in their old 1-inch chevron tracks. A larger supply of tracks with 2-inch chevrons is recommended.

b. The M46 tank has a tendency to throw tracks when making turns on hills or when traversing the lateral slopes of hills. The track center guides are too narrow, too pointed, and too short to prevent the toad wheels from riding over them when the tracks dig in or slip on lateral slopes.

3. Transmission. - The transmission oil tends to overheat when climbing long steep hills. The oil can be cooled by stopping the tank and running engine in neutral for 2-5 minutes. Crews in combat can not afford to stop and wait that long. A more efficient oil cooling system than the present troublesome oil cooler fan assembly is recommended.

Over

4. Oil Cooler Fan Assembly. - The shaft, beveled gears, and magnetic clutch of the oil cooler fan assembly frequently fail especially when the engine is "revved up" to negotiate obstacles or hills. When these parts fail on an M46A1 tank, the tank can not be driven under its own power and must be towed; when these parts fail on an M46 tank, the tank can be driven for short distances and at slow speeds only if extreme caution is exercised. A redesign of the oil cooler fan assembly to correct the weakness in the shaft, beveled gears, and magnetic clutch is recommended.

5. Driving. - When making turns on steep hills much of the power is transmitted to one track which either spins in place or digs into the ground. It is then necessary for the driver to back the tank in a direction tangent to the turn and then start climbing straight into the turn with both tracks pulling. A modified transmission to keep power in both tracks when making turns on steep hills is recommended.

SOURCE: Command Report - I US Corps

DATE: March 1952 Source No 444

(RESTRICTED)

SKID FOR TANK RECOVERY. - To facilitate tank recovery, the 245th Tank Battalion built a metal skid to replace a tank track which had been broken by an enemy mine. Initial experiments in towing a disabled tank on the skid have proved successful. This method of recovering tanks with one track broken is apparently faster than attempting to repair the tank on the battlefield. The use of a skid also prevents additional damage to the suspension system.

SOURCE: Command Report - I US Corps, Artillery

DATE: March 1952 Source No 445

(RESTRICTED)

ARTILLERY-AIR FIRE COORDINATION. - The concept of a Fire Support Coordination Center has been put into practice within the divisions and corps in Korea; however, the idea is relatively new and many problems are yet to be solved. Infantry and artillery fire coordination has had a long background

of successful operating experience. This is not the case, however, with artillery and air coordination. The problems of planning airstrikes, determining a flak suppression program, safe flying areas for aircraft operating in conjunction with artillery concentrations, and areas being shelled with VT fuzed projectiles, the timing and duration of silencing artillery fire to permit air strikes, all these and others are problems which have presented difficulties and which have limited the degree of effective coordination from being as efficient as desired between artillery and the Air Force.

RECOMMENDATION. - That a program of practical research and instruction be undertaken by the Army Field Forces together with the Air Force to produce practical teaching doctrine in air and artillery coordination in conjunction with the activities of Fire Support Coordination's Centers. Further that the instruction in Fire Support be included in the curriculum of The Artillery School. The idea of Fire Support is presented to students in conferences at The Artillery School, but it is felt that more emphasis on the practical application of a functioning Fire Support Coordination Center should be included in the School's curriculum. It is further recommended that Air Force-Artillery teams be trained to serve as instructors in this subject both at Service Schools and at division training in the field.

* * *

(RESTRICTED)

DEBRIEFING OF ARTILLERY AIR OBSERVERS. - The Corps Artillery Air Section maintains continuous daylight surveillance of the corps front. Adjusting artillery is its primary mission; however, it is also an excellent intelligence gathering source. Corps G2 personnel also fly regularly, though not continuous, reconnaissance missions over portions of the front.

RECOMMENDATION. - It is recommended that Corps G2 coordinate with the Corps Artillery Air Officer on establishing a routine debriefing program for artillery air observers. Having trained debriefing personnel at the Corps Artillery Air Strip would make available a wealth of additional information assisting materially in forming the intelligence picture. It is further recommended that more emphasis be placed on training within the Zone of the Interior in intelligence collection and coordination between artillery air sections and division and corps intelligence sections on the extraction of such information from air observers.

(RESTRICTED)

SUPPLY AND EQUIPMENT REQUIREMENTS ON A STABILIZED FRONT. It is recommended that allowances of Quartermaster cleaning and preserving materials be greatly increased to more nearly approach garrison standards.

Because all organizations are more stabilized and are closer to garrison living than is normal in combat, the allowances of Quartermaster cleaning and preserving expendable supplies for combat conditions have proved to be greatly inadequate. In most cases, unit messes now occupy prefabricated buildings, many with concrete floors. The issue of soaps, brushes, steel wool, trisodium phosphate and other cleaning materials cannot meet the requirements.

Also, because of the stabilized situation, all organizations are using equipment not authorized by pertinent tables of organization and equipment, such as squad tents, electric generators, etc. This equipment is authorized on an individual case basis.

It is also recommended that tables of allowances be established by higher headquarters, to standardize such issues and prescribe the allowances.

SOURCE: Command Report - 14th Infantry Regiment

DATE: March 1952 Source No 446

(CONFIDENTIAL)

PSYCHOLOGICAL WARFARE. - Psychological Warfare, in our present situation, is worthwhile. It is difficult to determine if the propaganda leaflet is the main reason for the number of North Korean prisoners taken for the period; however, interrogation of PW's revealed that leaflets are being read and have produced the desired results. PW's have informed us that it is very risky to be caught with our propaganda leaflet; therefore, any leaflets resembling "Script," would be more effective. Suggest something that looks on one side like the money used to pay North Korean or Chinese troops. Continued use of this type of warfare is definitely desired by the regiment.

Apparently the enemy feels that the use of propaganda leaflets has merit, for during the period the 14th Infantry received approximately 410 enemy propaganda shells. Some enemy leaflets were well written and some were very poorly written. The only effect these leaflets had on our troops was to keep them amused, and possibly to make them a little more cautious of the enemy's cunning.

SOURCE: Command Report - 140th Antiaircraft Artillery AW Battalion (SP)

DATE: March 1952 Source No 447

(RESTRICTED)

WIRE COMMUNICATION. - In the present static situation to insure positive communication, telephone lines are laid to all gun positions. In addition, lines are laid from individual tracks to supported infantry-artillery units. The T/O&E authorization is eighteen per line battery which is entirely inadequate under present conditions. A minimum of eight more telephones per line battery are needed.

SOURCE: Command Report - 40th Antiaircraft Artillery Brigade

DATE: January 1952 Source No 448

(RESTRICTED)

COST CONSCIOUSNESS, AAA. - Supply economy measures continued to be stressed in this command.

Organizations are conducting campaigns to salvage and effect turn-in of ferrous, as well as nonferrous, strategic materials to appropriate disposal officers. Continued emphasis and constant surveillance is being maintained to assure prompt return of scrap brass and serviceable ammunition packing containers. Operations are continually analyzed with a view to reducing cost of operations, and returning to appropriate supply channels those items which are not required for performance of the present mission.

* * *

(RESTRICTED)

All motor pools in this command are consolidated to effect maximum utilization of motor vehicles. This program continues to result in more economical operation and increases the effectiveness of organizational maintenance. During the past month a total decrease of 32,211 miles was effected in this command as compared to the average month prior to consolidation. This was accomplished without decreasing effectiveness of organizations in their assigned mission, and amounted to a monetary savings of $685.30 in POL supplies alone.

* * *

(RESTRICTED)
In furtherance of the supply economy program, the above mentioned course includes a four-hour period devoted exclusively to supply economy, its objective being to teach methods of conservation and economy.

(RESTRICTED)
RECOMMENDATIONS OF AAA BRIGADE. - That responsibility for training AAA specialists be placed on either the theater commander or the Zone of the Interior and that the means, materiel, personnel and accommodations essential for the purposes intended, be furnished to the authority designated.

Additional spaces and personnel be authorized to provide a centralized AAA school for the training of AAA specialists, not now available through pipeline sources.

Consideration be given to a review of T/O&E of AAA units to insure capability of 24-hour operations.

That cellular type units, similar to currently authorized Signal Maintenance Radar Units, be provided each AAA battalion by Engineer and Ordnance.

Field maintenance capabilities for Engineer gasoline generators (M5, M7, M15, and M18) be improved immediately to prevent further reduction in operational effectiveness.

That a diesel-type mobile generator be furnished each AAA unit to replace current gasoline-type mobile generators, and that insofar as practicable one type replace the several types now issued.

(RESTRICTED)
SUPPORT DIFFICULTIES, AAA ON AIR FORCE BASES. - AAA units stationed on or deployed in defense of Air Force bases have experienced considerable difficulty in operations due to lack of adequate logistical support. Support responsibilities of both Army and Air Force toward tenant Army units have not been clearly defined. Directives should be amplified to clearly establish AF responsibility towards tenant Army units. Local AIO's should be furnished funds to support AAA units at the required levels.

SOURCE: Command Report-Moji Port, 8156th Army Unit

DATE: March 1952 Source No 449

(RESTRICTED)

COST CONSCIOUSNESS. - In our economy program, savings of over $10,000 has been effected by use of salvage dunnage. The pooling of sedans has likewise conserved gas, oil, and wear and tear. In one month we were able to save 300 gallons of gas alone. Our management program has been making continual surveys, and results in reduced manpower has been effected.

SOURCE: Command Report - 21st Inf Regt

DATE: January 1952 Source No 450

(RESTRICTED)

PATROLS. - Forty-eight security patrols were conducted during the 8-14 January. Six light engagements were fought by the security patrols with enemy squad to platoon size units. The most significant action occured on 13 January. A Colombian Battalion patrol in position forward of Hill observed an enemy patrol approaching at 2115 hours. The Colombian patrol leader ordered his men to hold their fire until the enemy was within twenty yards of their position. When the enemy closed the distance, the patrol delivered simultaneous concentrated fires which resulted in an estimated 5 KIA and 10 WIA.

SOURCE: Command Report - 45th Infantry Division

DATE: February 1952 Source No 451

(RESTRICTED)

ADMINISTRATIVE BURDEN. - Recommend that the tremendous pressure of reports and paper work be held to a minimum. All reports requirements should be carefully considered periodically to ascertain if the results of the report justify the requirement.

SOURCE: Command Report - 40th Infantry Division

DATE: March 1952 Source No 452

(CONFIDENTIAL)

CONDITION OF EQUIPMENT. - When the 40th Division relieved the 24th Division in place, it exchanged most of the weapons and equipment in place. This had the disadvantage that equipment which was battle worn and in a very poor state of repair was turned over to this Division. It was found necessary to devote major attention to repairing and replacing numerous items of equipment which were found to be entirely unserviceable. By the end of February much progress had been made as a result of concentrated efforts but even then a tremendous job still remained to be done to approach a satisfactory overall condition. Fortunately the stable defensive tactical situation allowed time for rehabilitation program. Had an enemy offensive been launched in January or February 1952 much equipment would have been inoperative and might have been lost to the enemy.

(RESTRICTED)

SCOUT DOGS. - On the first of March, the 26th US Infantry Scout Dog Platoon (-) was attached to the Division for operations and support. Division then attached squads of this unit to the 223d and 224th Infantry Regiments. Dogs worked effectively with patrols of these units and it is felt that the use of dogs on patrols offers increased security without hampering activity. Best results are obtained when dogs work with members of patrol at lease two days prior to actual patrol. Some ambush patrols experienced difficulty due to nervousness when the enforced inactivity necessarily exceeded 3 hours.

(RESTRICTED)

GENERATOR FOR AVIATION SECTION. - The T/O&E makes no provision for generators for the aviation section, but it does authorize power tools. Generators are also necessary to provide lighting facilities for the section. The aviation sections work does not end with sunset. Planning must be done for the next days operation; photo studies must be made; administration and reports must be kept up to date. The T/O&E needs to be revised to take cognizance of this.

(RESTRICTED)

QUARTERMASTER COMPANY ORGANIZATION. - Approximately three months observation indicates that the scope of operations of a Quartermaster

company in a theater of this nature requires additional operating and administrative personnel. Following are three examples:

a. In view of the high morale factor resulting from the issue of ice cream, it is probably safe to assume this product will continue to be issued and distributed by Quartermaster companies at division level. The T/O&E (10-17N) does not provide personnel for this operation, it had been necessary to draw personnel from other sections, who can ill afford such loss, in order to provide sufficient amounts of ice cream to supply division troops.

b. The communication section of the Quartermaster company lacks sufficient personnel to properly operate the normal Quartermaster establishment in this theater, which in turn requires the drawing of personnel from other sections.

c. In order to adequately perform its own security mission additional filler personnel should be added to the existing T/O&E. With operations on a twenty-four hours basis, guard duty cannot be properly carried on and efficient operation maintained at the same time.

d. It is recommended that study be given to present T/O&E (10-17) relative to the foregoing examples.

SOURCE: Command Report - 89th Tank Battalion (Med)

DATE: March 1952 Source No 453

(CONFIDENTIAL)

USE OF TANKS ON MLR. - Of particular interest is the location of tanks in the present division sector. Out of thirty-four firing positions on the MLR, nineteen are located on the tops of ridges, in saddles between mountain peaks, and on ground generally considered inaccessible to tanks. Fourteen tanks are positioned on the ridges forming the west, north, and east edges of the Punchbowl and three tanks are in position on the northern extremities of Hearthbreak Ridge.

In the present tactical situation the tanks are being used almost exclusively as armor protected, direct fire weapons to reinforce other firepower on the MLR. The mobility of the tank has been utilized only to the extent of placing the tank in a firing position in some very difficult terrain. Although little if any maneuver

is involved, the tank-infantry team still exists with the tanker's position beside the doughboy on the MLR. The tanks' fire support can thus be placed in a minimum amount of time and with much greater accuracy than artillery.

The tanks have become priority targets for enemy counterbattery fire, and friendly infantry in vicinity of the tanks must be well dug in and be particularly careful about exposing themselves when the tanks are actually firing. To date, the best solution has been for the tanks to have two positions; a position which is out of sight of the enemy and a firing position. The firing position should be well sand-bagged on the front and sides if it is at all possible. This will materially reduce the amount of damage to the suspension system by enemy fire. The tank should have no OVM or other equipment on the outside of the hull while actually firing since it is invariably destroyed by shell fragments. It is also desirable to sand-bag the rear deck, the turrent and the forward portion of the tank. In spite of these precautions damage will be sustained by direct hits. Recently a 120-mm mortar shell penetrated into the engine compartment of a tank which had two layers of sandbags on the back deck. In several positions the tank must remain constantly in firing position and in these cases it has been found advisable to construct a trench under the tank in order that it may be entered by the escape hatch. In these positions maintenance is accomplished during the hours of darkness.

During the month all tanks on the MLR have established a night firing schedule. Range cards are prepared during the day and firing is conducted with or without use of flares at various periods during the night. This program was begun in an effort to harass enemy working parties since the vast majority of their construction work takes place during the hours of darkness. Judging from PW reports and the unusually heavy volume of return fire the program is proving very effective.

The terrain and weather has created unusual difficulties in logistics. Transporting the necessary amounts of ammunition, fuel, food, and water to the summit of a mountain some twelve hundred meters high has presented a formidable problem at times. This has been particularly true during the past few weeks of the spring thaw. During much of this period the vast majority of the tanks in position had to be supplied either by hand carry or in a few instances by use of the M39 as a cargo carrier. In these cases the M39 hauled supplies for adjacent infantry units as well as for the tanks. At one time an entire infantry battalion plus the attached tanks were supplied for a period of five days by two M39's. With the aid of the engineers and by use of tank dozers the various tank positions were kept operable during the period.

SOURCE: Command Report - 213th Field Artillery Battalion

DATE: February 1952 Source No 454

(RESTRICTED)

HOWITZER TUBES AND HC AMMUNITION. - In view of relative large number howitzer tubes changes necessitated by volumn of fire being delivered under combat conditions, it is strongly recommended that Ordnance Technical Services determine a relative calibration of tubes furnished as replacements in order that organization may maintain an equitable distribution of howitzers having similar characteristics.

It is also recommended that consideration be given to production of projectiles utilized for delivering HC smoke, manufactured with a fuze recess which will accommodate present type fuzes to include the varible time M96 fuze. At present, projectiles commonly known as "smoke shell," will accommodate only fuzes not having boosters or supplemental bursting charges.

(RESTRICTED)

VAN FOR SIGNAL REPAIR. - For purposes of providing an adequate place for proper repair and adjustment of delicate signal communication equipment, and for providing adequate storage facilities for such equipment when not in use and for necessary spare parts and spare batteries for signal equipment, it is strongly recommended that present T/O&E's for all types of Field Artillery Battalions be modified to provide for one van, Ordnance repair type, to be available to the Headquarters and Headquarters Batteries of all Field Artillery Battalions.

SOURCE: Command Report - 981st Field Artillery Battalion

DATE: March 1952 Source No 455

(RESTRICTED)

REPLACEMENTS. - A problem exists due to the loss and anticipated loss during the next two months of approximately 80% of the present strength. Personnel received to date are not trained or of the caliber to train rapidly to fill key positions such as clerks, personnel specialists, fire direction, survey, mess steward, supply, motor mechanics, and other technical qualifications.

The policy of not assigning personnel until the physical loss of personnel seriously handicaps the training of the new man. An untrained specialist should have at least one month training on the job prior to his relieving the assigned man. Also semiqualified personnel should have at least 2 weeks on the job training. Replacements have been received for critical MOS positions, with an ETS date less than 30 days after the ETS of the man presently holding the position. This does not allow the organization to consider such replacement as a fully qualified or a suitable replacement because he will not be able to serve sufficient time in this theater. This situation means that another replacement must be requisitioned for the MOS immediately. The policy of sending such personnel overseas in March 1952 with an ETS date in September 1952 is extremely wasteful, and gives a false impression of replacements being received.

SEP 15 '52 AM
DISPATCHER
AFF DISTRIBUTION CENTER