

MISC

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INF TANK SEATS

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N-13735

WAR DEPARTMENT
Washington 25, D.C.
1200, 11 July 1946

File No. _____

SUBJECT: Infantry Tank Seats

Annex A - Present Method of Transporting Infantry
Figures 1 and 2

Annex B - Proposed Method of Transporting Infantry
Figures 3 to 16 inclusive

Annex C - Vulnerability of Personnel

Annex D - Cost and Available Funds

Annex E - Action of the Armored Board and the Hq,
Armored Center

Annex F - Recommendation of AGF Equipment Review Board

SUBMITTED BY: Colonel W. B. Kern, Infantry

NR
26 JUL 1946

No PO Req#

1. PROBLEM

To determine whether permanent installations should be installed on tanks for transporting infantry.

2. DISCUSSION

a. The present method of transporting infantry on tanks is not entirely satisfactory. Normally, only 6 men ride the tank. The ride is uncomfortable and unstable. There is no provision for stowing infantry weapons, ammunition and equipment (Tab A).

b. By installing seats, racks, hand-holds, safety belts, and foot rests, 13 men with weapons, ammunition and equipment can ride comfortably and securely (Tab B).

c. Advantages of the proposed method are:

(1) Transports the basic fighting unit - the rifle squad - on one tank.

(2) Enables the tank battalion to transport easily the infantry battalion.

(3) Enables men to ride longer distances with greater comfort, less fatigue, and with greater security of equipment.

(4) Shortens road space.

d. Disadvantages of the proposed method are:

(1) Men are more vulnerable to small arms fire (Tab C).

(2) Stowage space for tank and crew equipment is reduced (Tab C).

e. The cost is comparatively small and funds are available (Tab D).

f. The Armored Board and the Hq, Armored Center disapproved the above proposed installations (Tab E).

g. The AGF Equipment Review Board recommended some of the above installations (Tab F).

h. It is concluded that the disapproval actions of the Armored Board and the Hq, Armored Center were unsound and did not fully present the views of the infantry.

3. ACTION RECOMMENDED.

a. That the proposed installations be installed upon the tanks of two tank battalions.

b. That these installations be tested in two infantry divisions.

c. That if the tests prove successful, all tanks be so modified.

WBK

Major General
Dir Orgn & Tng

4. CONCURRENCES.

Plans & Operations
Service, Supply & Procurement
Research & Development

ANNEX A

TO

REPORT ON INFANTRY TANK SEATS

PRESENT METHOD OF TRANSPORTING INFANTRY

1. The present method of transporting infantry on tanks is prescribed in FM 17-36. See figures 1 and 2.
2. The present method -
 - a. Provides for 6 men to ride the tank.
 - b. Is a temporary expedient.
 - c. Does not provide seats.
 - d. Uses ropes to provide hand-holds.
 - e. Does not provide facilities for the stowage of infantry weapons, ammunition, and equipment.
 - f. Does not provide safety features to prevent men from falling off.
 - g. Provides an uncomfortable and fatiguing ride.



Figure 4. Six infantrymen mounted on medium tank, M4A1 (left view).



Figure 5. Six infantrymen mounted on medium tank, M4A1 (rear view).

ANNEX B

TO

REPORT ON INFANTRY TANK SEATS

PROPOSED METHOD OF TRANSPORTING INFANTRY

1. The new proposed method -
 - a. Provides for 13 men to ride the tanks. See Fig 6.
 - b. Is a fireproof permanent installation.
 - c. Provides comfortable seats for all men. See Fig 3, 9 and 10.
 - d. Provides hand-holds where necessary. See Fig 13.
 - e. Provides facilities for the ready stowage of all weapons, ammunition and equipment carried by the 13 men, without the necessity of tying, clamping, or strapping down. See Fig 3, 4, and 6.
 - f. Provides safety belts for all men. See Fig 9, 12 and 13.
 - g. Provides a comfortable and relatively non-fatiguing ride.
 - h. Does not interfere with the ventilating system of the tank.
 - i. Does not interfere with the rotation of the turret, elevation or depression of the gun, or the firing of the gun in any position. See Fig 7.
 - j. Does not interfere with the stowage of the tank pioneer or maintenance equipment.
 - k. Does interfere with the stowage of:
 - (1) Tank camouflage net.
 - (2) Crew sleeping bags.
 - (3) Crew mussette bags.
 - l. Adequate means could be installed at small extra cost to stow the camouflage net and mussette bags.
 - m. Does not interfere with entry to the engine compartment.
 - n. The provision for transporting 13 men preserves the tactical unity of the smallest basic fighting unit - namely, the rifle squad (12 men) and allows a surplus of one man per tank.
2. Description of installations:
 - a. Bench type seat installed on rear of tank which seats five men comfortably. This seat is equipped with safety belts of the aircraft type and has a back which folds down (actuated by means of a spring) when not in use. A foot-rest is provided for the five men on the rear seat and it also acts as a mudguard. This foot-rest folds up when not in use, or it may be used to carry equipment. See figures 3, 6, 7, 8 and 9.
 - b. Six cultivator or tractor-type seats are mounted on the turret. See Fig 10. These seats are equipped with aircraft-type safety belts. See Fig 12 and 13.
 - c. Two cultivator or tractor-type seats are mounted on the rear deck, top engine-door gratings. See Fig 6.
 - d. A fence made of heavy steel wire is welded to the sides of the rear of the tank to provide space for the stowage of arms and equipment. See Fig 3.
 - e. Safety belts are attached to all seats. Attachment was improvised by wire in the model photographed. See Fig 12.
 - f. Hand-holds are provided for most seats as an additional safety feature while riding. See Fig 9, 10, 11 and 13.
 - g. Some non fireproof materials were used on the model in the construction of the bench and foot-rest. However, all fireproof materials could be used.
3. Modification of existing tanks could be accomplished in the field by means of kits and soldier labor.

4. The new proposed installation was on an M4 tank. A similar installation could be provided on the M26 tank.
5. A limited field test was conducted under the following conditions:
 - a. A squad of thirteen men was mounted on the tank. Each man carried his individual arm.
 - b. The tank also carried eight boxes of machine gun ammunition, two shoulder bags of mortar ammunition, one light machine gun, and one 60-mm mortar.
 - c. The tank was operated on paved roads and cross country over rough and rutted terrain, carrying the thirteen men and their equipment. See Fig 14, 15 and 16.
6. The test proved satisfactory from all considerations. The men rode easily and without discomfort. There was ample room for each man and all equipment. There was sufficient space to carry additional equipment. There was no need to tie or anchor any of the equipment. It was merely placed on the rear deck.



F. 6. 3



FIG. 4



FIG. 5



FIG. 6



FIG 7



FIG. 8





FIG. 10



FIG. 11



FIG 12



FIG 13



FIG. 14



FIG. 15



FIG. 16

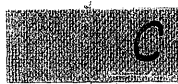
ANNEX C

TO

REPORT ON INFANTRY TANK SEATS

VULNERABILITY OF PERSONNEL

1. The purpose of transporting infantry on tanks is to ride infantry "to the battlefield" and not "on the battlefield". Infantry should dismount prior to receiving hostile fire.
2. In view of 1 above, protection against hostile fire is only of minor importance and consideration.
3. The new proposed method creates the probability of a greater number of casualties per tank in the event of hostile action.
4. The old method offers more protection than the new proposed method in the event of small arms or antitank fire.
5. There is little difference between the two methods regarding protection in the event of artillery fire.



ANNEX D

TO

REPORT ON INFANTRY TANK SEATS

COST AND AVAILABLE FUNDS

1. Cost:

- a. Kits - \$50.00 each.
 - b. Factory installation on new tanks, including labor - \$100.00 per tank.
 - c. Initial kits for test purposes - \$75.00 each.
- (Note: The above figures are assumed estimates only)

2. Memorandum from the Chief of Ordnance indicates that sufficient funds are available to effect the modifications on all tanks in the hands of troops and on replacement tanks and future production models. (assumed)

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(The contents of this Annex are assumed for school purposes. Actual facilities to determine cost and available funds were not available.)



ANNEX E

to

REPORT ON INFANTRY TANK SEATS

ACTION OF THE ARMORED BOARD AND THE HEADQUARTERS, ARMORED CENTER

1. The new proposed method was disapproved by the Armored Board and the Headquarters, Armored Center in 1945.
2. The Comments of the Armored Board and the Headquarters, Armored Center were:

Comments would be included here if files were available.

3. The new proposed installations and method were never seen or tested by the Armored Board or Headquarters, Armored Center. The action in 1 and 2 above, was taken after viewing photographs only. This information was obtained informally from the President, the Armored Board by Colonel W. B. Kern.



ANNEX F

TO

REPORT ON INFANTRY TANK SEATS

RECOMMENDATION OF AGF EQUIPMENT REVIEW BOARD

1. The Army Ground Force Equipment Review Board recommended for future tanks that: "Hand-holds, stanchions, racks, etc., shall be provided on tanks for the accommodation of infantry and their combat equipment for portee, in addition to normal outside tank stowage" (Par 26, Inclosure 1-C, Page 10, Part II, Inclosures, Army Ground Force Equipment Review Board, June 1945).

