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Author: Headquarters First (1st) U.S. Armored Division

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Report of CC "B" Commanders in Tunsia and Other Officer Board Reports

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G-1 and AG

1. Torch operations revealed the following deficiencies from the standpoint of G-1 and AG Sections.

a. In the absence of Army graves registration personnel, detailed plans and instructions to combat units, who had to assume the responsibility, were inadequate.

b. Insufficient administrative personnel, and in some cases none at all, accompanied the advance echelon. This made reports incomplete and late and since, in many cases, proper records were not kept, it was almost impossible to reconstruct the necessary reports.

c. Detailed instructions on administrative procedure were not completely understood and in some cases were not disseminated to the smaller units.

d. Lack of approved Tables of Organization or Tables of Allotment of Grades and Ratings prevented promotion of deserving personnel.

e. Delay in award and presentation of decorations and citations caused excessive paper work in tracing individuals, verifying facts, and securing necessary certifications.

f. Confusion in preparing safe arrival cards and lack of positive instructions for their dispatch resulted in a lowered morale among the troops.

g. Insufficient personnel and communications delayed delivery of mail both to and from the United States.

2. In correcting the above noted deficiencies, it is suggested that in future operations the following steps be taken:

a. Sufficient graves registration personnel should accompany the assault echelon. Where this is impossible, this function should be delegated to units of the assault echelon, who should be thoroughly trained for such services.

b. Sufficient administrative personnel must accompany the assault echelon to assure that correct reports are submitted. This is of greatest importance from a tactical as well as administrative point of view.

c. Clear cut interpretation of the requirements of all reports, regardless of how routine and obvious they may seem, must be established by the highest headquarters to which they are submitted. These instructions must then be disseminated down to and including the smallest units from which reports are required. To protect secrecy it may be necessary to issue these in sealed envelopes to be assimilated aboard ship. When

possible, however, it would be more advantageous to hold joint discussions with the personnel concerned.

f. The Commanding General should be authorized to give temporary approval of Tables of Organization and grades and ratings for special units pending final approval by the War Department. This should also apply where Military Areas and Districts are established subsequent to actual hostilities so that personnel could be assigned to these functions. This will permit parent organizations to drop such personnel and replace them by promotion and transfer. It is believed this would also create a very good effect on morale.

g. A digest of current Army regulations, War Department circulars and Task Force policies on awards and decorations should be disseminated to all administrative headquarters prior to debarkation. This must specifically establish the administrative requirements in connection with the award and the presentation.

h. It is recommended that safe arrival cards be filled out in Staging Areas and mailed as soon as the Task Force arrives at its destination. While later reports will show that certain individuals were killed in the landing operations this policy would nevertheless work to the benefit of the majority. If safe arrival cards are withheld until casualties have been verified it would be better to discontinue the use of safe arrival cards entirely.

i. A thorough understanding of censorship requirements should be disseminated to all troops so that recensorship would not be necessary. Careful planning and the use of machine records in advance of operations should speed delivery of mail to troops after arrival. It is felt that an A. P. O. number could safely be given out before departure from the States since units on maneuvers within the continental limits also use an A. P. O.

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G-2

1. Future planning and execution of operations.

2. Security measures recommended.

(1) That security control be established coincident with the initial planning of an operation.

(2) That a suitable Command Post with necessary guards, clerical personnel and telephone be established before a tactical staff is brought to Washington.

(3) That map reproduction be commenced far enough in advance so as to not endanger security.

(4) That reproduction facilities for the reproduction of photographs, charts and literature, be established completely under Army control.

(5) That all identifying insignia be removed from personnel and vehicles of tactical staffs and vehicles brought to Washington for operational planning.

(6) That greater care be exercised in telephone conversations especially long distance calls.

3. Preparation of necessary data.

(1) It is recommended that current data such as the M.I. Surveys and I.S.I.S. be revised by the M.I.S., W.D., to the essential information required by the staff sections in a form which may be issued to troops.

(2) The value of terrain photographs of possible objectives as well as aerial photographs cannot be over-emphasized.

4. Organization.

(1) The absence of approved Tables of Organization for Prisoner of War Interrogation teams, Counterintelligence and Censorship

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personnel has proven a distinct handicap, absolutely preventing the promotion of deserving individuals or replacement of personnel. It is recommended that the T/O for a Task Force Headquarters, now approved by the Chief of Staff as a guide only for limited distribution, be approved as standard and that similar tables be prepared for a reenforced Corps operating alone.

(2) Military interpreters are essential for troops operating in a foreign country. Civilian personnel employed locally as interpreters cannot be adequately checked for security nor can take the place of officers who must act as liaison officers as well as be able to negotiate with officials of the country in which they are operating. Prisoner of War interrogators cannot perform these duties as well as those of interrogation.

(3) It is also essential that Counterintelligence personnel and Censorship personnel speak the language of the country. It is particularly important that Counterintelligence personnel be selected for general background rather than for police experience.

(4) A Psychological Warfare Unit such as the unit under experiment at Fort Monmouth which combined both the personnel and material necessary for Propaganda and Public Relations would have been of extreme value. The radio set installed on the USS Texas by the Signal Corps and operated under control of G-2 was extremely valuable during landing operations, but could not be disembarked.

(5) Ground personnel trained in the tactical interpretation of aerial photographs should be included in the Air Corps photo interpretation sections.

(6) Under no circumstances should a Command Post of a combined force be placed on a ship of war having a combat mission.

(7) Corps and higher headquarters should be provided with a translation section familiar with enemy military terminology.

2. Individual and organizational equipment.

a. Without a Table of Organization, Counterintelligence, Censorship, Prisoner of War interrogation and interpretation sections have no means of procuring or replacing either organizational or personal equipment.

b. Broadcasting equipment is considered essential for a Task Force Headquarters.

c. Ample transportation should be provided for Counterintelligence personnel.

3. Basic and special training of all individuals and units.

a. Officers who are not highly trained in the tactical doctrine, organization and equipment of our own army, or who have not had extensive duty with troops, are of no value to the G-2 section.

b. Divisional staffs should be trained in the proper use of special intelligence sections such as Counterintelligence and Prisoner of

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War interrogation groups.

c. Prisoner of War interrogator teams should receive special training at Military Intelligence Training Center in the identification of enemy units, enemy organization, armament and equipment. These teams should be assigned to a Division in sufficient time to receive training in the Division before departure over seas, and to become familiar with the personnel of the Division with whom they will operate.

4. Training and equipment for combined operations or other special operations.

a. G-2 personnel should be trained in intelligence methods and staff procedure of our Allies for combined operations.

b. Special liaison personnel should be provided for any combined operation so that tactical staffs will not be reduced by the necessity of furnishing liaison officers.

5. Cooperation between Army, Navy and Air.

a. In order to reduce duplication of effort all intelligence activities should be placed under the direction of a single G-2. An intelligence section should be so trained as to insure the mutual flow of information. In order to insure this each must be familiar with the intelligence methods and requirements of the other.

b. In landing operations it is essential that Prisoner of War interrogators and Counterintelligence personnel be included in the initial wave.

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G-3 REPORT

1. When such an operation is decided upon, the commander should be assigned his mission, and allotment of forces at least six months prior to the execution of his mission. He should be the supreme commander and the navy and air commanders should be members of his staff, with power to provide the necessary personnel and equipment needed for both the combined training and execution of the mission. The force allotted should be quickly assembled into a training area suitable for field work and in proximity to the area suitable for the amphibious training. The ships required for the sea passage and landing should be available at an early date after the arrival of the force in the training area. A continuous program of loading and beach landings should be carried on to provide a thorough training of landing craft crews, shore parties, sea scouts, ship to shore communications, naval gun fire support, aircraft support, carrier based, and air ground support parties.

2. After the plans of subordinate commanders for their respective attack have been approved by the Task Force Commander, based on his directions, repeated maneuvers embodying ship to shore to objective must be carried on until they approach perfection in timing and execution. Maps of the actual objectives, with deleted names (for secrecy), must be provided for the planning of all commanders to include platoons. When, after embarkation, the actual map of attack is issued, all will be familiar with their sectors.

3. Mistakes, omissions and suggested corrections.

a. Less than three months elapsed between the assignment of the mission to the Task Force Commander and the landing on a foreign shore. During that period the plan and allotment of forces available was changed several times, necessitating a serious delay in crystalizing the plan of attack.

b. This delay in "fixing" the forces available made it impossible to assemble the force for combined ground training. Supporting air, either naval or army, was never available for the few landing exercises that were held.

c. In many cases units arrived in training and staging areas just prior to embarkation. The sub-force commanders had no opportunity prior to sailing to train or evaluate the units which he was to lead ashore.

d. Some staff sections were not furnished with their allotted quota of officers and enlisted men until shortly before departure. The result was that these new arrivals were of no value to such sections which had no time to initiate the new arrivals into the operation.

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e. Units allotted should be filled to their T/O strength and officers and NCO's should not be transferred out of the force. There is never sufficient time to 'break in' new leaders.

f. The Task Force Commander and the Naval Force Commander should not have their joint headquarters on a naval vessel that may be required as a unit in a naval engagement. Such was the case in this operation, resulting in the cessation of shore to ship and ship to shore communication with landed army units. The army commander must have adequate channels of communication to his immediate subordinate elements entirely independent of naval requirements.

g. Combat leaders were not available to the TQT's, with few exceptions, until shortly before sailing date. Ship specifications were in gross error as to both personnel and vehicle capacity.

h. The present combat leader carries too few landing boats, necessitating a very complicated plan of such landing boats from ship to shore to other ships to complete the successive assault waves. If new type combat leaders are not built which will provide the unloading of each ship by its own boats, then additional ships carrying only landing boats and crews must be included in amphibious operation convoys. Such would not only help the problem of providing the required boats for assault waves, but would provide a reserve for the boats that remain on the beach stuck or destroyed.

i. Navigation, by ship captains, to assembly areas was faulty, in one instance five miles from the transport area and also entirely too far offshore. Many ships in the Fedala landing force were entirely out of position at the time set for loading the boat waves, necessitating a revamp of the boat employment plan in order to carry out the mission of the CT's for arrival on their beach at appointed hour. This caused a delay of 45 minutes in their assigned H hour. Transports should be moved in shore as rapidly and progressively as possible, as the shore assault reduces the effect of enemy shore batteries, to shorten the time lag of reloading returning landing boats for successive waves.

j. Ship crews were in some instances poorly trained, and consequently as a whole very green and inexperienced in handling landing craft under surf conditions.

k. Landing Craft Commanders erred in their navigation to beaches and in two cases this proved extremely disastrous.

l. Naval gun fire should not be fired on prearranged time schedules except as a shore barrage previous to any troops landing. Naval gunfire missions should be 'on call' from naval gunfire support parties.

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g. Training of such Task Forces should include subjecting troops to naval gun support and over-head artillery and machine gun fire. The necessity for including such training was made apparent in this operation. Troops under over-head naval gun fire became confused and stopped through inexperience when subject to close-in bursts.

h. Naval air support is extremely essential and more effective against shore installations than naval gunfire particularly on shore batteries and field artillery. In this operation naval air support was practically perfect, through air ground support parties requests.

i. Daylight landings are too costly and will be successful only against weak or no opposition although landings before daylight entail much difficulty in leading landing boats and navigation beaches, it assures surprise and reduces casualties.

j. Ground training must provide the maximum of night problems to effect confidence in clearing the beach and regaining lateral cohesion in the assault of the objective.

k. Troops in the assault waves of an amphibious operation should go in with light equipment in order to move rapidly across a sandy beach and continue forward in extending the beach-head. The present field equipment is much too heavy to permit rapid movement over any prolonged period and too bulky to permit proper use of life belts.

l. Incendiary bullets, fired by attack aviation, were more effective than bombs against motor columns and grounded aircraft.

m. In some cases new type weapons such as the Launcher, Rocket, M-1, were delivered to units during the final loading. Intensive effort was made to familiarize units as equipped enroute, but the powers and limitations of such weapons were actually unknown until tested in combat. Machine guns were received on the dock improperly or faultily assembled and failed to function in combat.

n. The failure of motor equipment with radio installed, to arrive until loading was in progress, with the necessary 'radio silence' current made it impossible to test such radios, resulting in many failures upon arrival ashore.

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G-4 SECTION

1. The following comments, observations, and recommendations are submitted for the purpose of improving the preparation and execution of any future similar operation. Many deficiencies noted here may have no bearing on such a future operation where the preparation time element is not so pressing.

2. Future Planning and Execution of Operations:

(1) Specific ships to perform a combat loaded mission should be selected and assigned to sub-task forces as early as possible before S day, and not later than six (6) weeks prior to S day; and detailed ships' characteristics and plan data forwarded to the proper sub-task force commanders so that tentative landing plans can be made. As soon as practical after ships have been assigned, the Transportation Quartermaster for each ship should be sent aboard, whether or not the ship is at or near the port of embarkation, to check ships' characteristics against the tentative loading plan, and to check gear, numbers and types of landing craft, etc., of the assigned ships.

(2) Transport Quartermasters should be furnished the cubage (cubic dimensions) and the weight of individual packages of 30 day maintenance supplies of all classes, and the overall cubic dimensions of all standard and special vehicles and other odd types of equipment, at least one month prior to S day, so that the loading plans can be definitely outlined as early as possible.

(3) If authority is delegated to sub-task force commanders to make their own assignments of their units to their allotted ships, a limiting date, not later than three (3) weeks prior to S day, must be established by the Task Force Commander, after which no changes in assignments will be made in order that depots might have a minimum of two (2) weeks for properly marking supplies with proper shipment numbers and consign and move them to the correct address at the Port of Embarkation. A berthing plan for ships, based on port facilities and the sub-task force organizations must be made as early as practicable after ships have been assigned to sub-task forces, in order that depots might forward supplies and equipment to the correct location within the area of the port's utilities.

(4) At least one (1) month prior to S day of an initial combat loaded convoy, the Task Force Headquarters should establish a Task Force Liaison Headquarters at the Headquarters of the Port

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of Embarkation, to coordinate with the Port and to supervise the execution of the embarkation plan. Personnel assigned to such a headquarters should be thoroughly familiar with the plans of the Task Force Headquarters and with the facilities and operations of the Port prior to the beginning of the execution of the embarkation plan. The Liaison detail should include representatives of G-4 (in command of detail), Adjutant General, G-2 (Security Officers) sections, and representatives of the Special Staff Sections of supply services to include the Air Corps. Representatives of the G-4's of sub-task force commanders should also be included within this liaison detail, exclusive of Division Transport Quartermasters and individual ships' TQM's

(5) The general supply plan drawn up for this operation has proved sound. It is believed that it would have taken care of any situation that might have developed on shore. However, in view of the necessity of the Army to care for many hundreds of naval survivors from transports sunk off shore for Class II supplies (clothing, blankets, etc.), the 30-day maintenance of Quartermaster Class II supplies could be increased by about 50%, to insure sufficient to cover such emergencies.

(6) The proportion of the G-4 section of Task Force Headquarters accompanying the B Convoy should have been much larger than that sent with operation TORCH. A large percentage of the initial functions of such a headquarters, once beach heads have been established, are G-4 functions and cannot adequately be handled by two officers and one non-commissioned officer.

k. Individual and Organizational Equipment:

(1) Field Artillery —

(a) The panoramic sight bracket of 105 Howitzers is unnecessarily high, exposing the gunner to small arms fire. On present models the panoramic sight bracket shaft should be shortened by seven inches; in new manufacture, the left front armor should be raised the same amount.

(b) The reserve ammunition, stored vertically along the sides of the body of M7 carriage, extends above the side of the body exposing the primer end of the rounds and making them vulnerable to premature discharge if struck by small arms fire or shell fragments. The side armor on present models should be raised by welding on a strip of armor plate; in new manufacture, the 10 inch cut-away on the sides should not be made. The sides were originally designed with this piece cut away to facilitate resupply of ammunition over the side. However, this advantage is outweighed by the disadvantages of the increased jeopardy to the howitzer and the crew.

(g) One 105mm Howitzer on M7 carriage was put out of action by having the forward end of the recoil cylinder punctured by small arms fire. An armor plate shield should be installed to protect the forward end of the recoil cylinder.

(2). Coast Artillery -- Multiple gun carriage T-28, E-1, half-track, considered very effective against low flying planes and dive-bombers. It is credited with 9 planes.

(a) At time of receipt, two lock frames of 37mm gun were found broken. Subsequent firing broke others.

(b) Loading trays were not all interchangeable.

(c) The adjustment of the equilibrators was difficult, probably due to the weight of the two added .50 caliber machine guns.

(d) Control cables from the central control box to the sighting mechanism are too short, causing the cables to bind and making the setting of leads difficult. Cables should be lengthened.

(e) Position of the 37mm ammunition chests is such that rapid fire is difficult.

(f) A shield should be provided for the gunners.

(g) A light forward arch sight should be mounted in the present sight telescopes. This would facilitate picking up the targets also firing, in case the central box control became inoperative.

(h) For dual purpose AA and AT firing, the mount should permit a minus elevation of several degrees.

(i) Spare parts were insufficient. One 37mm gun spare parts kit should be provided for each gun carriage and one spare 37mm barrel should be supplied for each platoon.

(j) Approximately 15 of the 78 carburetor floats received have rusted through, putting the half-tracks out of service until the floats could be repaired by soldering. This repair increased the weight of the float and affected the performance of the vehicle. All carburetor floats should be of non-corrosive material.

(k) Two half-tracks became casualties because of the shearing off of the short pinion shaft on the differential.

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(l) Much trouble was caused by leaking oil cooler gaskets, apparently due to poor machining of the castings. Oil leaks also occurred between the oil cleaner and the crankcase. Action should be taken to eliminate the cause of oil leakage.

(m) Two timing chain housings cracked.

(n) Some vapor locks developed. Fuel systems should be modified to eliminate vapor lock.

(3) Signal Corps --

(a) The quantity and variety of dry cell batteries required for radio sets creats a very serious supply problem in landing operations. In such radio sets as the SCR-536, 511 and 284, where a single dry battery will last only from four to eight hours in continuous operation, the quantity of batteries required for each set soon becomes very large as the time of operation is extended. This problem may be alleviated by the adaptation of all similar sets to use a single standard dry cell battery; more extensive use of hand generators; more extensive use of vehicle storage battery power; the use of larger, more efficient, although heavier and bulkier, batteries; design of a small, light, rugged storage battery.

(b) Radios powered vehicle mounted radio sets should be provided with long antennas which can be set up to increase the range of the sets in non-mobile operation. The flat top antenna equipment provided in the SCR-193 is not adequate to cover all frequency ranges and equipment should be provided in the SCR-299 for the use of a flat top antenna similar to that provided in the SCR-188. Attention should be called in instructions to the fact the antenna loading unit on the transmitter of radio set SCR-299 can be by-passed to use a long flat top or doublet antenna.

(c) Additional tuning units for radio set SCR-193 should be provided in limited quantities in the Division and higher units so that these sets may operate in special missions with SCR-299 and SCR-284 on frequencies outside of their normal operating range.

(d) There is a need for a telephone switchboard slightly larger than the BD-72, yet smaller than the BD-96. Switchboard BD-91 should be issued in replacement. It is believed that this board could be issued for the replacement of a larger number of switchboards BD-72 and for a smaller number of switchboards BD-96, with a consequent increase in operating efficiency and reduction in type of equipment.

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(e) A Parts Kit should be standardized for the installation of radio set SCR-193 in truck, 1/4 ton, 4x4. This installation requires the use of a 12 volt ignition system, identical to that already standard in the truck, 1/4 ton, 4x4, amphibious. Special installations of this type were used in operation TORCH and have proven very satisfactory. Such an installation presents the best means at present known for getting a completely self-contained medium power radio set and transportation ashore.

(f) A Parts Kit and instruction should be standardized for installation of radio set SCR-299 in car, 1/2 truck, M-3, or a similar vehicle. Such installations were specially made for this operation and proved highly successful.

(g) When landing operations are contemplated in areas where commercial telephone facilities are available, equipment should be provided in Signal units of Division and higher headquarters for the repair and utilization of open wire and cable telephone facilities. Existing facilities can usually be repaired and put back in service for military use much more quickly than new lines could be constructed. This equipment should be carried even at the expense of field wire materials and equipment.

(4) Engineer Corps --

(a) Generally, engineer, individual, and organizational equipment was satisfactory. The advance planning included items to meet any eventuality. This naturally necessitated the inclusion of some items later found not to be needed under the conditions encountered.

(b) Engineer supplies were combat loaded on a basis of a greatly modified 30-day supply of normal maintenance items. Packages were loaded not to exceed 100 pounds. This weight actually should be kept to a maximum limit of 75 pounds if manhandling is to be the only source of transportation.

(c) No engineer material should be packed in either corrugated or cardboard containers. The present system of tacking packing slips on the outside of boxes is decidedly unsatisfactory. Slips are either torn off boxes or deliberately thrown away after unloading and before reaching the consignee, thereby leaving him with no knowledge of contents. It is believed that some system of box marking should be developed to identify numbered packing slips. A numbered copy of the packing slip for each numbered box should be forwarded to the Supply Officer who is consignee.

(d) All organizational sets such as, demolition kits, carpenter sets, etc., should be boxed complete and shipped as a unit.

(3) Ordnance --

(a) Reports from various units connected with the landing operations disclosed that there were no functional failures with the M1 Rifle; that troops engaged in landing operations should be thoroughly trained in the care, cleaning and functioning of the M1 Rifle. Troops which had oiled their rifles previous to debarking encountered difficulty with stoppages due to the combination of water, sand, and oil mixing into the mechanism of the rifle. 50% of these stoppages could be prevented by further instructions in the care and cleaning of the weapon.

(b) Results of inspection of 4096 helmets, steel M1, show 409 were defective due to cracking of steel shell. Four general locations of cracks; two in front, one over each eye. Two in rear, generally diagonally opposite those in front; extending upward from the brim to the crown. No indication of abuse or rough unusual treatment. Helmets have been used as wash basins and seats by individuals. This use does not appear to be the cause of cracking, since many of the defective helmets had not been used for either purpose and were new in appearance and condition. No apparent defect in manufacture except that all cracks are in one or more of the above locations.

(c) Many reports were received that dirt and sand on face of bolt of sub-machine gun, .45 Cal. M1 frequently prevented belt from closing completely, thereby causing misfires. Sub-machine gun is an unpopular personal weapon due to its weight and feeling that it prevents or handicaps individuals in performance of their duties. This comment was made by Military Police; Officers on duty at Docks and Railroads; personnel carrying and operating crew-served weapons such as Rocket Launchers, M1; combat Officers; and Staff Officers.

(d) The Launcher, Grenade M1, is reported to be essentially valuable against grouped personnel and crew-served weapons at ranges up to 100 yards. Duds occur when grenade strikes soft impact area. Tank was over one grenade. Tank was stopped and abandoned. Four tanks hit at ranges of 50 to 100 yards. Three were abandoned, one withdrew. One accident in training has been reported. Due to improper care and cleaning, accumulated dirt caused tail assembly to bind. Grenade burst about 10 feet in front of firer, injuring four men. Water does not impair effectiveness of ammunition.

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(e) One hit with the Launcher, Rocket M1, was recorded on a tank at 150 yards. Tank surrounded by dust and fire and withdrew. It is effective against personnel, a mortar crew being killed at 400 yards. Duds occur when projectile strikes soft impact area. Water does not impair effectiveness of ammunition. Improvements recommended include carrying sling; protection for firer against burns from back-blast; ammunition carrying bags.

(f) Mechanics should carry 15 - 20 pounds hand tools, light machine tools and inspection gauges on board transports. It is not contemplated that mechanics carry these tools when marching, but they should not be separated from them.

(g) On medium tanks, M4A1, 15% of old type fuel pumps failed in first month. Failure was due to faulty seal, loss of prime, galled vane and twisted shaft.

(h) Organizational tools frequently did not accompany organizations, or were not unloaded by this Port. Special repair tools were not available to maintenance units before departure.

(i) Organizational spare parts were not supplied ordinance maintenance units before departure.

(j) Organizational vehicles were rifled and detachable parts stolen enroute.

(6) Quartermaster —

(a) It is believed that the present type field jacket is not lined with heavy enough material to give sufficient warmth. Lining should be material of about the weight of an army blanket.

(b) The 5-gallon drum with handle for gasoline, diesel fuel, and water has been entirely satisfactory. The 55-gallon drum has likewise proven very satisfactory.

(c) The thin, tin, square, 5-gallon oil cans in cardboard boxes have proven very unsatisfactory except when they were crated. They were frequently smashed in the rough handling received in unloading from ships and reloading on trucks and railway cars. Loss of oil in this particular type of container is estimated at 25%. When crated in wooden crates, the loss was negligible.

The heavier cylindrical 5-gallon oil cans have been entirely satisfactory to date. It is recommended that this type of can be used to the exclusion of the square can. It is further recommended that a system of standard colors for the cans be used to designate different weights of oil as: Yellow for

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S.A.E. 10, green for S.A.E. 30, red for S.A.E. 50. This system is used in part but should be used throughout.

(d) Containers for Universal Gear Lubricant and Greases are satisfactory. However great difficulty has been experienced in locating and segregating the small crates of grease, water pump, No. 4. It is recommended that the boxes of 12 or 24 one-pound cans be given a distinctive color marking, and that the cans of Universal Gear Lubricant be of a different shape or have a distinctive marking so that it will be readily recognized as lube and not oil.

(e) It is further recommended that neither the refiners' name nor the trade name of the product be shown either on the sides or the tops of containers of oils and greases. This space can be better used for large, clear markings indicating contents. The refiner's name and batch number can be stamped or pressed into the bottom of such containers; this information is desired only when check on the quality is necessary.

(7) Medical —

(a) Medical equipment and supplies of medical units that accompany advance troops should be lighter in weight and made more portable by hand.

(b) The present ambulance, 3/4 ton, 4x4, has not been entirely suitable for use on sandy terrain. Efforts should be continued to devise some type of ambulance of low silhouette and better traction.

(c) Malarone tablets should be issued in sufficient quantity to last ten (10) days. Water bags should be landed with troops not actually engaged in beach fighting.

(8) Chemical Warfare —

(a) It is recommended that a light weight gas mask, similar to the M1 Civilian Mask with a light weight rubber or impregnated leather facepiece be developed especially for landing operations, to be carried enclosed in a vinylite or similar synthetic sack with a quick opening and closing arrangement to give ready access to the mask. The waterproof sack should be carried inside the carrier and should be usable many times. A ten percent combat replacement of these masks to be by combat loaded ships.

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(b) Landings should be made with impregnated protective clothing (wool or cotton, according to climate) worn by all ranks. Shoes should be impregnated shortly before landing. Such clothing protects the wearer against rain better than ordinary clothing; protects against vermin, and gives a high order of protection against possible use of gas by the enemy.

(c) Ointment, protective, M1, and Impregnite, shoe M1, should not be issued to the individual but be held by company and similar unit supply officers, for issue when necessary.

(d) Some drums of Agent, demustardizing (bleach), have rusted through approximately sixty (60) days after delivery to Port of Embarkation. It is recommended that the inside and outside surfaces of chloride of lime drums be treated to render them resistant to corrosion. It is recommended that chloride of lime not be issued to troops prior to embarkation but be carried with supplies for monthly maintenance and issued after units have debarked.

(e) Poor position of installing of the Apparatus, decontamination, 1½ qt., on vehicles resulted in loss of decontaminating liquid due to open valves. Numerous apparatus installed are improperly located and could not be reached if it were necessary for a vehicle driver to decontaminate his way out of a vehicle. Standard locations in all vehicles should be determined.

(f) Curtains, gas proof, should be deleted from T/BA of combat units. The extra weight and space assigned to this item does not warrant its being carried by fast moving troops.

(g) Generator, smoke, v chicular, M1. Due to mechanical difficulty in installing and servicing, it is believed that this should no longer be T/BA equipment. M-15 explosive smoke grenades should be provided instead for all armored and motor units as well as for tank destroyer units.

(h) Kit, M3, vapor detector, should not be taken during landing operations.

(i) Recommend that T/BA allowance of Sacks, gas resistant, be cut in half; also maintenance figures. Packing should be improved to prevent breakage of crates. Approximately two-thirds of sacks received were packed in too light a container. Recommend that this item be held in depot storage until needed.

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(i) Recommend that a complete unit of maintenance, gas mask repair parts, for 200 masks for 90 days be packed in one box complete as a unit.

(k) Present flamethrower, portable, M1, too cumbersom and necessary fuel oil, hydrogen, nitrogen, further complicates supply problem for fast moving troops required in a landing operation. It is recommended that a simple, easily portable flamethrower be developed similar to a large Roman candle, to be used once and discarded. Such a flamethrower should have a range not less than 50 yards and weigh not more than 25 pounds.

(l) Fog oil drums should be more plainly marked with some distinctive marking to distinguish them at a distance from gasoline and similar drums. Also, a better grade of paint and larger letters be used for marking drums so that markings will not be obliterated due to weather and rough handling.

(m) It is recommended that Respirators, dust, M2, be packed in a manner similar and equal to service gas mask. Present package does not withstand weather. The M2 should be issued to replace the M1 as soon as available.

(9) Miscellaneous --

(a) The present types of landing craft (LCT's, LCV's, and LCM's) are not of sturdy enough construction. Many were put out of commission during the first and the second days of the landing by contact with underwater rock formations. Many naval officials concurred in the opinion that they were not built strongly enough.

(b) It is believed that continued efforts should be made to modify the field range, M1937, so that less clogging of feed lines and burners develops when using leaded gasoline. It is not practical to carry unleaded gasoline as an additional item of supply, so this range should be made capable of using 80 octane leaded gasoline without the present difficulty encountered.

e. Basic and Special Training of All Individuals and Units.

(1) It was apparent during the early days of the operation that the individual soldier as a rule had not been properly trained in the care, cleaning, and preservation of his individual clothing and equipment. While this matter is

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entirely a command responsibility, appearances indicate that more time should be spent on this subject in order to reduce the quantity of replacement items drawn from reserve stocks.

(2) Many units equipped with new and different types of T/BA equipment just prior to embarkation had no opportunity to become familiar with such items before debarkation. Some instruction was given enroute but this was not sufficient to get efficient results out of such items.

(3) All troops need more training in the handling of supplies. Many officers and non-commissioned officers with supply functions were not familiar with standard supply channels, nomenclature, installations, nor the technique of handling classes of supply.

4. Training and Equipment for Combined Operations or Other Special Operations.

(1) The need for much more amphibious troop training was apparent. Training in the actual handling of supplies across beaches, training of shore parties and beach parties in conjunction with troops and their supplies, and training in the involved communications system of a landing on a hostile shore must be emphasized and carried out under as near as possible combat conditions day and night as is possible.

(2) There is a definite need for some type of small craft capable of dragging beached landing craft back into the water so that they may be put back into operation and service. Many craft were beached by the high swell and breakers and were not recovered in time to prevent complete destruction by pounding surf. Such a recovery craft could have saved many craft for unloading of vessels.

(3) Further familiarization with and training in the application and use of the technique of waterproofing of all vehicles and the "blue-sealing" of tanks is necessary. Drivers and crew members must be instructed in the putting on and taking off of elements of the above to preserve and protect vehicle before, during, and after the necessity for this protection.

5. Cooperation between Army, Navy, and Air. —

(1) Any indications of lack of cooperation among these services can generally be attributed to lack of knowledge on the part of many officers of all the three services as to the duties

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and responsibilities of their own service, and the duties and responsibilities of the other services.

(2) The subject of Amphibious Operations, beginning with the initial planning stage and including all phases of operations on hostile shores that are joint Army, Navy, and Air, should be covered exhaustively in all service schools to include the Command and General Staff School. It is considered advisable to expand the separate Amphibious Force C. & G. S. course given briefly at Amphibious Force Atlantic Fleet Headquarters that included details of training, planning, and coordination among services, necessary to the execution of such an operation. The Transport Quartermasters' School likewise should be expanded to insure that each organization has personnel familiar with these very special duties.

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ENGINEERS

1. The Commanding Officer of shore party troops should be a member of the staff of the Sub-task Force Commander. This is essential since he must be assured of certain equipment and that essential personnel and supplies be loaded on the combat loaded vessels where they will be readily available during the landing operation.

2. The shore party commander and his staff should be put on the beach early in the operation in order to coordinate distribution of personnel between beaches, as well as eliminating particularly dangerous and impossible beaches.

3. In this operation each shore party company was allowed to take ashore two bulldozers. This number should be increased to at least 3 or preferably 4 per company. These vehicles proved invaluable in getting vehicles across the beach and up on ground where they could operate under their own power.

4. There were four amphibious tractors allotted per company. This number is sufficient but should not be reduced. These special vehicles were of great help in pushing wrecked lighters off the beach.

5. There must be more careful design of beach markers. Also, it is essential that beach markers and lights be loaded in transports where they are readily available. During this operation the transport QM elected to store them where they could not be reached on the morning of the landing.

6. The Thompson submachine gun is an unsuitable arm for Officers and Non-commissioned Officers of the shore party. It is impossible to work at times in surf 3 or 4 feet deep hampered by this weapon.

7. Wheeled vehicles and even full-track vehicles found difficult going on the soft, sandy beaches. The first boats should carry rope nets or strong woven wire so that the shore party could provide traction on the soft sand.

8. MAPS

a. Too many types of maps were made, resulting in a voluminous issue to individuals and sections who found little or no use for most of the types received. Fewer types would lessen unnecessary work and duplication and would facilitate distribution. Some photo maps were of poor quality and the best use could not be made of them. Landing maps 1/25000, prepared by Beach Erosion Board were not used to any extent due to lack of planimetric and topographic details inland. Largest demand was for Tactical Map, 1/50000, Road Map 1/100000, and town plans.

b. Recommend that in future operations:

CONCLUSIONS

Cases and packages of maps not to exceed 100 to 125 lbs.
Sheets to be of uniform size.
Size be such as fits presses of Engineer Topographical units.
Town plans be provided in same quantities as tactical maps.
Photo maps be provided at scales 1/10000 to 1/15000.
Air photos be provided, one per company.
Road maps 1/1000000 be provided, one per officer and one for

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each vehicle.
(8) General staff sections should receive wide coverage but individual officers should get same distribution as for normal troop issue.

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MEDICAL

1. Collecting and clearing elements of medical battalions should be landed as soon as possible after beaches are secured.

2. All enlisted men of attached medical troops should be equipped with a lighter type of the present stamping device to imprint the data from the identification tag on the emergency medical tag.

3. Before ships of an assault convoy leave the "Transport Area" the Navy should furnish the Army Task Force Commander with accurate information concerning casualties being evacuated by the Navy to the Zone of the Interior. This procedure is absolutely essential in order to record casualties in proper category of killed, wounded or missing.

4. Some type of litter, such as the Stokes, should be provided on shore which will permit quick and safe transfer to the ship.

5. Dried plasma proved to be exceedingly valuable in the initial operations. In one instance it is estimated that at least twenty lives were saved by its immediate use when approximately 500 casualties were admitted to a clearing station during a two hour period.

6. The type of electric hand lamp used by the Navy was found to be very valuable for use in Army medical installations. The following is a suggested recommendation for the distribution of this type of lamp:

Two per battalion medical section
Two per regimental headquarters medical section
Two per collecting company
Six per clearing company

7. Half (½) grain of luminal was given to each man debarking during the assault phase. A larger dose would be excessive for some individuals. Practically no seasickness resulted in the landing forces going ashore in landing craft. The half grain of luminal may have been the deciding factor although further experimentation is recommended.

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SIGNAL

1. Message Center personnel must be thoroughly instructed, and seasoned as a team, in message center procedure prior to the operation. A lack of thoroughly trained select personnel will render any communication system worthless. There has been a tendency to underman message centers, and the best fitted officers and men have seldom been trained in this work. The traffic manager and his staff in any civilian communication system are the key operating group of the system. Likewise, a well trained message center is the key to successful military communications. It must be large enough to handle its traffic without borrowing personnel from other communication activities. The grades and ratings alloted must be sufficiently high to attract and hold the best available personnel for this most important mission.

2. Operational experience has proven that seven (7) communicated officers are required as a minimum to operate one echelon of a Corps Message Center in the field on a twenty four (24) hour basis. If more than one echelon must be operated, the number of officers required will be increased accordingly. The normal corps operates at least two (2) echelons.

3. Radio Net Control Stations of the Landing Force Command nets should not be on a battleship. In addition to the danger of losing such stations if a battleship is involved in a naval fight, each such engagement causes interruptions in radio channels. This is due to radio sets being sensitive and easily jarred out of adjustment, or even made unserviceable by the shocks of hits on the ship, and by the effect of the firing of the ship's own guns. The radios cannot operate during the periods in which the ship is engaged in battle.

4. Sub-task force communication personnel should come from the Signal or Communications unit of that particular force. Signal detachments from outside units, no matter how well trained, cannot be sufficiently familiar with the organizations they serve. Thus they lose the advantage of special training they might have had in landing operations.

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CHEMICAL WARFARE SERVICE

Chemical troops, armed with mortars for firing TNT and smoke would have been invaluable in supporting the attack, especially during its early stages when little or no artillery was available.

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Interview with Lt. Col. John K. Waters, Commander of 1st Bn, 1st Armd Regt (Light Tanks,) 1st Armd Div and Lt. Col. Hyman Bruce, Commander of 2d Bn, 13th Armd Regt (Medium Tanks), 1st Armd Div at the 1st Armd Div CP, 5h miles S E of Oran, December 29, 1942.

Col. Waters: We landed at Oran from Mariosbas (landing boats) on November 8, 1942. We were actively employed in the occupation of Oran and vicinity on Nov. 8-9-10. At the completion of this operation by a combination of marching and rail to Souk-Arras we were actively engaged in the Tunisian theatre until December 23 when we were returned to the vicinity of Oran for rest and refitting.

Col. Bruce: A small portion of my group was employed on November 8, 1942 in vicinity of Oran. On Nov. 13 we moved to Tunisian Front by overland to Algiers then to Bone by LTC then overland to Souk-Arras and were engaged there from November 17 until December 10, 1942.

Col Waters: At Oran we were employed as a reinforced battalion with tank destroyers, infantry, and reconnaissance engineers. At the Tunisian front were employed as a battalion with no attachments. At Arzew where we landed near Oran, the Rcn Co of C Comd "F" got ahead and we followed and captured the airport using tank destroyers, infantry, and reconnaissance engineers actively. They all played a very important part in the thing. Everything ran just as in the book. During this action we run into a company of French tanks, Model 1935, Renaults, armed with h7's and our tanks and tank destroyer destroyed 14 of them. We lost 1 tank which was later recovered. It was a shame to shoot at these French tanks as we could almost see the shells go right through their thin armor. It gave our men lots of confidence. Our battalion captured the Tafaraoui airport.

When we arrived at Souk-Arras I reported to Colonel Hull, the commanding officer of the British Blade Force which is a part of the British First Army. Tanks moved overland to Lebaf and moved overland to Souk-el-Arabe. The battalion moved from Lebaf to Beja from which place we jumped off on our first mission which was to move overland to vicinity of a valley 12 miles south of Mateur in vicinity of Sidi-bou-Aicid. We were to establish a tank infested area there. On our way to the Chouigui-Djeida area we run across a German air field which was unprotected and destroyed 20 Stukas. In the meantime we destroyed 3 assault guns (Italian). At dark we withdrew to our bivouac area about 8 miles to the vicinity of Tebourba along the El-Bab road. On reporting my position to the British Force Hq I was told that I was in the wrong valley. They ordered me to move 1 company during the night immediately back into the valley where we had been, then move the rest of the battalion before daylight over Chouigui Pass and there went into reserve. We accomplished the whole thing and at 0830 were

German tanks appeared on the scene and we were sitting pretty for them. We did not have to move as 1 platoon of tanks guarded the pass behind the hill and 1 platoon on the other side. 1 platoon was situated on the other side of the road in a gully and the German tanks advanced down the road, 6 Mark IV's and 3 Mark III's. When they got within 300 yards of the platoon on the hill they opened up on the German tanks. The going was pretty tough stopping them and I ordered another company and assault guns in and destroyed 6 Mark IV and 1 Mark III and I lost 6 tanks doing it. Called upon the British Commander to help us out with some 6 pound tanks which moved around to cut the Germans off and they got 1 Mark III and only 1 German tank got away. After that battle we really thought our light tank was a good tank. We then had to move to meet a counter-attack that afternoon which did not amount to much. During these battles we were undergoing lots of bombing. Once an hour was average. In my opinion the Germans had the air privilege. Then we moved back to another area 4 miles in reserve; however, we had to send 2 companies out each day to block roads here and there. The Blade Force had 50 tanks with them making a total of 100 tanks on the scene.

The Blade Force is somewhat like a combat team and was commanded by Colonel Hull - Consisted of the 17th and 21st Lancers, 1 Bn of the 17/5th FA (-1 Bty), Bty of the 106th Coast Artillery (AA), 1 Derbyshire Yeomanry. They have 2 peeps, 2 scout-cars, and 2 armored cars in each platoon, 5th Engineer Bn, Bty of the Royal Horse Artillery Bty 77th FA. They fought on column and none helped us except the company I called for. This all took place on November 25, 26, and 27. About Nov. 28th was ordered to Chouigui-Tebourba area and set up plans to move into Tunis and they called it off at 2:A.M. Next day 35 German tanks appeared, and seemed to increase in number each day and went to work on Tebourba. After 4 days we were sent to Medjez-el-Bab where we were again told we would be in reserve. Reverted to our C Comd "F" and were told we would maintain our vehicles but said we would send 50 tanks daily for reconnaissance on right flank. 8 tanks sent the night before did 75 miles of reconnaissance the next day with a British outfit. Germans were using M-III with armored cars. Would not stand to fight. This went on for 4 or 5 days and C Comd "F" was forced to withdraw and we were again attached to British First Guard Brigade and used for patroling which lasted for about 5 days and we lost 1 or 2 tanks from strafing, one from running over a French mine. This one was pulled back and in 3 hours was running again. Then we pulled out and into Souk-el-Khemis where we refueled and turned over all vehicles to C Comd "F" and they redistributed them. We were brought back here, that is, all our personnel. We turned over 3 officers and 13 men to bring the 17th Armd Regt up to strength."

Col. Brown: "When I got to Rome I met General Anderson of the British First Army and he gave me an order to report to the Div Comdr of the 78th Division about Nov. 17. He gave me instructions to get rid of all extra impediments, such as "A" barrack bags, and lots of other stuff. I got no infantry, no artillery, no engineers. Moved from Souk-el-Khemis-Medjez-Ould Zarga where we ran into nothing but small delaying actions, generally German parachutists. From there to Medjez-el-Bab and run into a lot of difficulty. Force consisted of the 5th Northamptshires, 175th FA (155mm), Lancashire Fusiliers, the Northamptshires and we launched the attack from the NW edge of the town with the 5th Northamptshires toward the river and hit across the other side with part of the 175th FA Bn. Launched an attack on the hill holding until the 175th FA was placed. Crossed the river by fording. Left my peeps and motorcycles. The 70Ist FD Bn, Co C, was attached to me and never joined me until daylight. They were attacked by planes and 80% were casualties. We crossed the river and gained high ground at Medjez and could see the withdrawal of the Germans from Medjez. Launched an attack on Medjez using the 5th Northamptshires under Col. Crocker and the 175th FA Bn. under Col. Kelly (an American FA) and our tanks as a combat team. The 175th FA gave us cover on withdraw from high round south of Medjez-el-Bab. Infantry employed from south and I went southeast and enveloped the town to the east to cut off the retreating Germans. We cleared them up in 3 hours. We captured some German prisoners and released many British prisoners, some of them from the Fusiliers. We spent the rest of that day around Medjez, preparing for a counter-attack. Prior to leaving Medjez the Germans blew up the bridge and the British engineers built an extension over the blown up span. The counter-attack never came. From Medjez we received orders to leave and go ahead and seize Tebourba. The East Hampshires had preceded both the 5th Northamptshires and myself and were being held up by small resistance between the river at Tebourba and a hill west of the river bank. Our infantry pushed the Germans back and we reached the outskirts of the town on about the 23 or 24 of November. We found out that the Germans held high ground on the east side and it would be impossible to move forward so decided I would cross mountains south and west and hired an old Arab guide to guide us overland. Incidentally the Arab also took my field jacket. At daylight launched an attack from the north and northwest going southeast. About 9:00 A.M., the town was clear of Germans and they were withdrawing in direction of El-Aouseuni and blew bridges across the river again. Next thing the town was immediately heavily bombed by 88's and Stukas. Next order was to launch out at Djedida. All we had with us was about what was left of the 5th Northamptshires (80% casualties). Went up and made observation and watched a movement from Djedida-Mateur of 24 combination motorcyclists, 16 tanks of M-III and M-IV type moving rapidly northwest toward Mateur. We finally launched our attack and met small resistance such as snipers, cleared them up and continued until we

we hit the airport at Djeida vicinity where new planes had just come in. We destroyed them with fire of 37mm and 75mm from a hill top. At the same time we launched an attack through valley into Djeida and run into German 88mm fire with small AT weapons and these in turn protected by riflemen and machineguns with some tanks which did not come out. We lost 5 tanks in that action hit 5 88mm guns and helped British infantry capture a hill that commanded Djeida. The British claim to have gotten 6 - 88mm guns. Next morning the British Commander decided to attack the town. It was decided that I would stay on the hill and act as supporting artillery while infantry attacked the town. We gave them HE for 15 min. and 1/3 smoke and 2/3 HE for another 5 min. The British infantry moved in but the Germans outnumber them and our infantry was driven out but I held the high ground that day until the 5th was relieved. The relieving unit was the East Hampshires. They came up with a force of about half a battalion. They relieved us and I moved my tanks back to Tebourba to catch up on my maintenance since we had had no maintenance since the time I had gone into action. About the 3d day of my occupation of Djeida they moved me to Tebourba. C Coml "B" had moved into the area and I reverted to command of C Coml "B". C Coml "B" moved up and the next day we had a fierce tank to tank encounter with Germans who were driving the British from Djeida down the valley. The German combined ground and air action managed to force the British to withdraw from Tebourba and at the same time broke up the tank action and we withdrew our tanks south and west of Tebourba where we went into defensive positions to cover the British withdrawal from Tebourba, then moved south to Medjez-el-bab and moved into bivouac areas to rest our men and for maintenance when plan to attack Tunis came through, which was later called off. They decided that we would move across the river on east side to be prepared for counter-attack of Germans. Quite a bit of activity in Tebourba-Djeida-el-Bathan area and the next day they attacked up from El-Bathan, dislodged the 1st Bn of our 6th Inf, destroyed the guns of Btry C- 27th FA Bn and I met the Germans on the plains of El-Bathan where we had a knockout fight. One captured German prisoner had a field order to advance 12 Bn that day but we knocked them out through they held the high ground, and we blocked their way south. There it rained for 3 days and they pulled by outfit back. Now resting, catching up on maintenance, getting into shape, and getting new tanks. German air and artillery is formidable."

Employment of Infantry - Whatever kind were at first. Protect the infantry in support and assault, along pivot of fire, in consolidating positions which were inaccessible to tanks. No coordinated action between armored infantry and tanks.

Employment of Artillery - Used forward observer and indirect fire. When we want in the artillery would generally go into position as soon as it could, then go to work as in normal tactics.

AT Weapons - Were not employed as they should have been. Planned to protect right flank but had only 5 guns left and British put them guarding bridges.

Flank Protection - Watson: Only flank protection I had was a mountain. Was in a valley between 2 mountains. No necessity to put out any flank guards.

Brown: Same situation.

Employment of Tanks - Watson: In advancing across country we go with the leading company in column of platoons. Platoons in line with 100 yards apart depending upon terrain. When the ground was muddy and we could not go off road it was necessary to go right down road. In tank attack we had 1 platoon in position and I on the hill and we did not have to move to destroy the Germans.

Brown: Assembled company commanders, gave them the information and issued orders over voice radio not using code. Employment of the tanks depends upon terrain. In Medje to secure ground for FA we came down the road and as the companies came abreast of the area, went into a right flank from a line of wedges and went over the hill. In going from hill mass to river we followed the road in a long column. In attacking over rolling ground we use companies in line of wedges or inverted wedges. When we hit the enemy we are massed generally about 1200 to 1500 yards depending upon disposition of the enemy.

On FM sets - Watson: Had fine reception on these sets.

Brown: Our FM sets gave us considerable trouble keeping them on frequency. When 75's fire the jar would knock them off calibration. One time my tank was hit and it jarred the tubes right out of the set.

Fire support, Indirect Fire - Brown: Only on 2 occasions did we use indirect fire.

Brown: Take our commander up to OP and would wave and show us with his fingers and give signals to the gunners. Takes many shots to get in. When we got all guns in we would fire as battery. Most was direct fire at 1600 yards or under.

Brown: The gyro-stabilizer worked fine but their training was not graduated enough to use it. Once you pick out the target and run for the target you cannot divert your tank at all. We have not stressed the stabilizer enough.

Effective range of 37mm against Mark IV - about 300 to 400 yards.
" " " 75mm " " " 800 yards down.

Tanks as FDA - Watson: Use them the same as reconnaissance vehicles. Send them down the road leading softer vehicles. When the tanks are fighting the other vehicles would stay and observe while tanks would attempt to move around flank and destroy the enemy.

Employment of Recn Agencies -- Webers: I had 4 motorcycles and 4 jeeps that I used on Recn and I used them only when I was sure that they would not run into AT guns. I did not sacrifice them. The communication between us was by motorcycle messenger only. They had no special armament except .30 Cal. machinegun mounted on the jeeps. I would send them in to have a look around and then they came back and reported to me. I needed Recn and did not have it and was seriously hampered. I had to use my light tanks for reconnaissance.

Brewer: I had a Recn Plat from the regiment plus my battalion Recn Plat and my Recn plat generally preceded me from 1 to 3 or 4 hours. The Recn plat of the regiment performed long distance Recn and in Recn was kept within 1/2 hour of my column. Our vehicles are much too light for reconnaissance and whenever they run into heavy stuff they had to turn and come back and could then secure no information. Ordinarily they would withdraw to flanks, establish OP's and start reporting. Communications: 99 radio in half-tracks and by motorcycle messengers which we took off motorcycles and put in jeeps where they belong.

Vehicle Markings -- Webers: Our own air forces expected our vehicles to be marked with a white star but they were marked with yellow stars and they strafed my tanks. I suffered no damage but we injured one of our own planes by hitting his motor and it had to be replaced.

Brewer: Our own planes strafed me but did no damage. The TD attached to me was marked in the normal way but were strafed by P-38s. German tanks have no markings but are painted a muddy color which is extremely difficult to see.

Webers: We paint numbers on our tanks on engine door and sides.

Brewer: The Germans carried a big red cloth with a white Swastika in the middle and used that when German planes came over. A prisoner assured me that this cloth was all they used. As far as our star is concerned, it is of no help except as identification to the British.

Signal Flags -- Webers: Used some.

Brewer: I used a flag once and it seemed as if the Germans concentrated everything they had on me so I pulled it down in a hurry. Flags just help pick out the leaders and company commanders and make a target of them.

Radio, Type and Range -- Webers: Used SCR 193.

Brewer: Used 193 for battalion and another one in Recn net and the remainder were SCR 608.

Webers: My SCR 608 worked wonderfully but you have to run your engine all the time to keep battery charged. They should have a charger.

Brewer: My SCR 608 did not work as well possibly because my tanks were old. My repair man was excellent but we had no spare parts.

Webers: I had a time was making an alert and I think that helped.

Air support forty - Victory; find none.

Bruce: Had a turkey command until about the 24 day. Rigged up a system with the British 78th Division and I got air support twice and it took two hours to get it. Helped to drive Stukas away.

Communication within the Vehicle - Victory: In my light tanks communication was by touch. Found that the interphone system was not dependable; too much wire and red tape for the men and got very satisfactory results by using touch.

Bruce: Interphone in medium tanks worked satisfactory but I could not talk to the whole crew at the same time. When a tank was hit heard the interphone goes out and we passed signals along by touch.

Communication by tanks within the platoon - Victory: By vision.

Bruce: Purely vision and used radio when it was working.

Communication by battalion and company - Had FM radio which worked in light battalion but seldom in medium battalion.

Bruce: We depended on prearranged plans. Could pull back, discuss problems, and go into attack.

Communication of tanks and supporting infantry - Prearranged.

Bruce: During movements formed with an engagement the infantry commander rode on the back of my tank. The artillery commander went up with me in the same way.

AT Weapons - Victory: Used a 37 Plat with 75m on half-track and they worked very satisfactory.

Bruce: With the British 5th Northamptons they had a small attachment of six-pounders AT guns which were very effective. They would take their guns, dig in, conceal them, and wait until the German tank was as near as 50 yards before firing and then you could almost see the shell go through the tanks. Our 76lat TD in never had an opportunity. 37 88-AT gun employed at Djedida but had soft skin and were both destroyed by direct bomb hits.

Methods of rallying after attack - Victory: Never had to rally.

Bruce: Had to stay there and hold. On one occasion the infantry came up and held for us. One thing - we always designated a general rallying place in case of further withdrawal.

Method of securing tanks - Victory: Left 37 75m with tanks about 10 to 30 miles back. During movement they came up at darkness and the AT guns with them.

Bruce: Same way. Also used that tanks had dropped back for maintenance.

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Method of Security - Veteran: When bivouacked in vicinity of enemy kept 1 man per vehicle on alert at all times with each company having roving patrols. When I moved back I would use 2 roving patrols within the company not keeping 1 man from each vehicle alerted. Sometimes sighted tanks for bivouac defense. Normally moved in SOP fixing unit. On the road we used regular advanced guard or covering force. Or in center of bivouac.

Bruno: Had 1 man alerted in each tank and tank set in perimeter with each company given go much of circle to handle. Machineguns taken out of tanks and put on outposts. Usually had 3 man outposts who took turns sleeping. We were jumped only once at night and nothing happened.

Do tanks precede infantry - Bruno: Depends on situation and hour of day. In day platoon of tanks precede infantry. At night infantry precede tanks.

Method of supply - Veteran: We were under the British and had a Bn S-4. Must have a Bn S-4 and have sufficient personnel to do the job. Supplied with 9 trucks by G Comd "B" under command of 1 officer tho I had to supply a battalion supply officer and 2 men to assist him. We were supplied directly from the British to the supply officer and he brought them up to us in the trucks. I averaged 20 miles each way. We almost only 1 night's supplies. Used British 1k men to a box of rations and they were satisfactory. Ammunition came from British. Ordnance officer collected ammunition and had it on hand and our supply officer picked up the ammunition. Gasoline and oil was handled in the same way.

Bruno: Same general setup. Used Bn S-4. Never failed to come up. Ammunition came up every night. The British did a splendid job.

Method of Vehicle Maintenance - Veteran: Very light maintenance. This needs reorganization. Crews did what they could but were so busy they did not have an opportunity to do much.

Bruno: Had a battalion maintenance crew plus 3 mechanics. As long as troops are in the front lines fighting they cannot do maintenance.

Evacuation of Personnel - Veteran, Veteran: I would send my medical forward when I thought there was a lull in the battle. The first night they were taking 2 ambulances to rear and our medical officer took the wrong road and I have not seen him since. After that the British were very helpful sending up ambulances whenever I asked for them. Sometimes the medical officer would take a chance, go out in a half-track and bring back as many wounded as he could. It is impossible to get them all.

Bruno: My operation grew with the battle of Djedda. Tried to get ambulances out during lulls. They were all marked but the Germans would let them get out on the battlefield, then fire on them. Then I had to leave my wounded until darkness. During battles another tank would pull up and pull the wounded up on the battlefield. Bring them back to the medical officers, then go back and resume fighting. Medics would follow

my column, set up behind the nearest cover next to the battle and go to work. I always had 1 ambulance in place. British Evacuation Hospital was about 5, 7, or 10 miles back. I now have a number of my wounded men back with me ready to go again. Their morale is excellent.

Disposition each of Prisoners - Waters: We would send them back with our half-tracks. If we were moving forward we would put them right in with us, carry them with us until we got a chance to send them to the rear. Never gave us any trouble. German prisoners were usually surly. We took 1 wounded German tank officer prisoner. He was a fine soldier and expressed his appreciation when our medical officer gave him a cigarette and a tablet to ease the pain. He was very complimentary to our American troops. However, he would say nothing that would give us any information.

Bruns: When we took a prisoner we would search him, remove his personal effects which were sent to headquarters, remove his insignia, question him, then turn him over the British infantry who would take him to the rear. Most of our German prisoners had been at the Russian Front. They were not very talkative the one of them did tell us that he thought the Germans had lost the war in Russia. Italians, on the other hand, are inclined to be too talkative and we get much information from them. One Italian officer who was a pacifist gave us much useful information which we found to be very true. Another thing we noticed about the Germans was that practically every German soldier carries his soldier handbook with him at all times.

Both Col. Waters and Col. Bruns recommended highly the Armored Force book on the "Platoon in Attack". It is sound and useful. It needs something in it about tank versus tank warfare.

USA 117a

COMPANY "B" (Reinf.)
16th Armored Engineer Battalion
A.P.O. 251, New York, N.Y.

December 20, 1942.

SUBJECT: Report of Board

TO : Commanding General, Combat Command B, First Armored Division, A.P.O. 251, New York, N.Y.

1. A Board consisting of three officers of this command met on December 19, 1942 to investigate ways and means to improve the organization, tactics and equipment of an Engineer Company (Armored) and submits the following recommendations;

a) A change in the T/BA to include a radio for each Engineer platoon, which will have a sending and receiving radius of at least 20 miles.

b) A change in the T/BA to include a 50 cal. machine-gun (air-cooled) in each of the three Engineer line platoons, making a total of five 50 cal. machine-guns per Company instead of the two now authorized.

c) Each Company in a Maintenance Battalion be assigned a special Squad consisting of an NCO and 12 EM to be employed in neutralising booby traps on disabled vehicles in the front line.

d) The manufacture and issue to Engineer Units of standard anti-personnel mines and booby trap mechanisms such as igniters, electric and non-electric, metallic fuse lighters, etc., all of which are regular items of issue in the German Army and of which the American Army has none.

e) The laying of mine fields should be accomplished under the supervision of the CO, Armored Engineer Company, whenever possible.

f) The present electric mine detector issued to Armored Engineer Companies should be made much sturdier and much lighter so that it will function in any conditions of weather and terrain and may be manipulated from the crawling as well as the walking position.

g) An Engineer platoon should not be employed on the defense of a road block without support of other troops.

Kermit S. Swanson
KERMIT S. SWANSON, 1st Lt.
Member

Roy A. Doman
ROY A. DOMAN, Capt.
President of the Board

HUMPHREY IRELAND, 1st Lt.
Member

USA -117a

COPY

HEADQUARTERS COMBAT COMMAND "B"
First Armored Division
Tunisia, N. Africa

In the Field
22 December 1942.

MEMORANDUM:

TO : Commanding General, Combat Command "B".

The following observations regarding maintenance have been noted throughout the operations of this Command during a period from 1 October, 1942, to present date:

1. WATERPROOFING: Training for Waterproofing and dipping of vehicles in sea water should be practiced to a great extent. Waterpdoofing should be done slowly and carefully, and the men impressed with the importance of a complete, thorough job on each vehicle. Actual dipping and running in prescribed depths of sea water is the best method of training. Failure to waterproof carefully will result in mechanical failures and the men must realize the task is futile if not done properly. Careful waterproofing and success in water encourages the work and proves even to the skeptical the feasability and practicability of waterproofing. Familiarity and knowledge of waterproofing means a great saving in materials. Material Guides are of great value. (See Attached "A"). The final stages of waterproofing should be done just prior to the loading of vehicles on shipboard and near the Port of Embarkation. This Command was forced to waterproof vehicles 30 miles away from the Port of Embarkation, and some fires occured enroute, resulting in the loss of 1 tank for the operation.

2. The vehicles were on board ship over a period of 3 weeks and on most vessels the vehicle crews could not get to their vehicles during the voyage. Batteries were not disconnected by order, and came through the voyage in good condition. Care was taken in tanks, particularly, that all switches were cut before loading. A few spare batteries, however, put on board each vessel before sailing will be a good insurance against any failures.

3. LANDINGS: Vehicles landing in L.C.M.'s (carrying one or more vehicles from the deep-sea vessels) must be discharged, if at allpossible, in the depths in which these craft can beach. It has been noted that craft, in approaching beaches, struck small sand bars and, disregarding the Beachmaster's orders, lowered their ramps and ordered the vehicles to take off. In some cases, wheeled cehicles were put into as much as 9 feet of water, and of course the landing was a failure. One medium tank was put into water which lapped the bottom of the turret, (about 9 feet) and made the trip to the beach successfully. However, this practice should be discouraged, and the Naval Landing Craft Personnel instructed (if the tactical situation permits) not to land craft at the first place reached, if this is unsuitable, but to pull off andfind a more suitable spot; furthermore, in taking vehicles off the L.C.M.'s, great care must be exerted to see that the wire cargo nets in which the vehicles are loaded into the L.C.M.'s are cleared of the wheels when the vehicle takes off. It is of the utmost importance that prime-movers be loaded with their trailers in the L.C.M.'s.

Trailers and AA guns were brought ashore individually, and were removed from the L.C.M.'s with much trouble and valuable time lost.

4. BEACHES: It is strongly recommended that a small group of maintenance personnel be a part of the early serials landing on the beach. Following this, it is urged that in addition to the bull-dozers, which are of great value on the beach, heavy Maintenance equipment, such as 10-ton wreckers, be among the first removed. Additional Maintenance personnel can be landed with these wreckers. Many Summerfelt Mats are needed to providesufficient avenues of evacuation from the beach. Tanks and half-tracks can negotitate sand and are capable of getting off the beach, but wheeled vehicles definitely need the Mats. An insufficient number of Mats tie up the beach area and makes landing slower.

5. Established drying areas near the beach, where the waterproofing can be removed are not absolutely necessary. Removal of the oiled cotton waterproofing over the intake screen on tanks is all that is necessary for immediate operation. The removal of splash curtains on the front of radiators is all that is required of wheeled vehicles and half-tracks, and the vehicles then can be driven some 2 or 3 miles before the more detailed dewaterproofing need be accomplished. (See Attached Form "B").

6. EFFECTS OF SEA WATER: To date no failure or apparant damage to the vehicles from sea water has appeared. All were checked as soon as possible and completely lubricated. However, all vehicles have been operating canstantly since the landing operation, and nevertheless, all bogies, wheel bearings, etc., are in good running condition. Wheels pulled for observation and check show slight indications of sea water, but the lubricant was still in good condition. Care was taken before sailing that all were well lubricated with a high grade of lubricant (Marfak #2) and the results justify this care. Many tactical situations will not permit anything more than immediate dewaterproofing and the vehicles must be able at once to operate for a prolonged period.

7. MAINTENANCE OBSERVATIONS: It hasbbeen proven that half-tracks can march long distances overland. A 600 mile march, of which halfwas over mountain roads, indicate that the half-track is capable of moving overland without excessive wear either to the vehicle or to the tracks. The Self-Propelled guns showed the most track wear on this march. Of approximately 300 half-tracks moved in this manner, only 3 suffered from any serious Maintenance failures.

Thought should be given to adding to the personnel and equipment of the Battalion Maintenance crews in an Armored Regiment. Their work has been excellent, and with the dispersion on individual missions of the Battalions of an Armored Regiment, the Battalion crews must have more equipment properly to maintain its Battalion vehicles. (See Attahhed Form "C"). Adding to the Battalion crews will more or less decentralize the Regimental Maintenance and it is recommended that a Recovery Vehicle Platoon should be organized in the Regimental Maintenance. At present, this Command is using a Sercurity and Reconnaissance Platoon consisting of 20 men and an officer, as a part of the Recovery Section. The personnel consists of men from the tank crews of Maintenance Company, Armored Regiment. In the Combat area this Security and Reconnaissance Platoon has been absolutely necessary to locate and aid the wrecker crews in recovering disabled vehicles. Small detachments of Engineers have accomplished the recovery parties to remove any mines or booby traps set by the enemy and their invaluable aid has been a most important factor in recovery. It is therefore recommended that a permanent Engineer detail,

consisting of two (2) N.C.O.'s and five (5) enlisted men be attached to the recovery security platoon, and this personnel will supply a permanent group, coordinating engineer and recovery work. In the majority of cases, recovery is done at night and the Recovery Parties must have guides and the protection mentioned above to operate successfully.

8. Urgently recommended for field recovery is a tracked vehicle. The present wrecker is greatly handicapped in sand and deep mud, and a track vehicle is definitely needed. The S.P. 105, on a medium tank hull could be converted to a track recovery vehicle - less gun - mounting a large winch on the rear, and using a heavy pintle both front and rear for the present tow-bar. This type of vehicle would also provide the recovery crews with more protection, which does not at present exist with the high vulnerable cab of the wrecker.

9. Recovery in a Combat area has disclosed that numerous tanks have suffered from damaged and locked transmissions, due to projectile penetrations through the housing. Obviously these cannot be immediately repaired and with these locked transmissions the tank cannot be moved without breaking the tracks. Breaking the track on a medium tank does not solve the problem, as a vehicle of this weight cannot be towed unless it is on a hard surface road. A "floating" or free sprocket is recommended, providing of course, it could be practically designed. Removeable lugs replacing the studs is suggested, and if so designed, with the removal of the lugs, the sprocket would turn freely. This would necessitate an axle design with small simple bearings in the sprocket and would allow free travel when the studs are removed. The vehicle could then be towed without breaking the tracks.

10. It is most imperative that tracked vehicles have their tracks in excellent condition prior to a campaign. Tanks with tracks already turned should not, and cannot, campaign in the Field for any prolonged period with tracks in such condition. Furthermore, it is well established that there is 10 to 15% less wear on turned tracks; and in the Field, where parts are most difficult to get, tracks just cannot be procured. Long tank marches overland to get to the Theatre of Operations should be definitely avoided, if at all possible. This Command was called upon to move a battalion of medium tanks some450 miles overland, 200 of which were over mountain roads, and the wear on engines and tracks has definitely shown its effects in the last campaign. (See attached photographs).

11. Transporters for tanks are most urgently needed and requested. These must be furnished in quantity at least sufficient to move a complete Battalion in one operation — that is, 54 Transporters. These could be under Corps or Army administration and control. Furthermore, this would result in a saving of fuel. The British type of Transporters with the Diesel Prime-Movers average 3 miles per gallon of fuel, which is alone an important factor in Field Operations. Furthermore, Transporters can be used to some extent in recovery by the carrying of disabled vehicles to the rear echelons. With the present equipment, it is most difficult and sometimes impossible to move or transport medium tanks with damaged suspensions any appreciable distance.

12. Many of the M3 tanks ignited after being hit by enemy A.T. guns and the crews recommend that all oil should be carefully cleaned and dried in a fighting compartment, before going into Combat. It is also recommended that all rubber padding be removed as it is said to easily catch fire. This, however, has not been definitely determined.

13. Replacement vehicles in the Field should arrive with and contain full equipment. This Command received replacement tanks lacking interphones, arms, and radios. It was necessary to spend valuable time, personnel and equipment, scraped together to fit these vehicles properly for combat.

14. In spite of long hours running, the performance of tank engines has been excellent. The following is data on the ten high running tanks in the Command, and all continue to operate.

Light Tanks			Medium Tanks		
W.D.Number	Miles	Hrs	W.D.Number	Miles	Hrs
306636	2190	306	309592	1736	309
303107	1971	306	309151	1975	314
306627	1632	309	309814	1535	290
303094	2096	328	309468	1538	282
306585	1572	297	306337	1627	279

Neither time nor conditions have been available to enable maintenance personnel to pull and completely check all tank engines. To date, 6 engines have been replaced - 2 light and 4 mediums.

15. The past training in maintenance and care of vehicles has appeared continuously through this Command's operations, All echelons of maintenance have done excellent work, and drivers, mechanics, and crew chiefs have acted on their initiative to keep all vehicles rolling.

RICHARD J. GRONDONA,
Maj, 13th Armd Regt,
S-5, CC/B.

RJG/shh

Form "A"

(Extract Copy from letter to C.G., 1st A.D., from Maj WAYNE D. SMART, S-4, 12 October 1942.)

List of Materials Required for Waterproofing:

	¼ TON	½ TON	1½ TON	2½ TON	AMB	H/T
Flex Met Tube 2½"	¼ ton	-	-	-	-	6
Flex Met Tubing 1-3/4" ft.	9	12	10	8	12	6
3/4" rubber tubing ft.	2½	3½	3½	3½	3½	-
Windshield wiper rubber hose 1/8" OR Met Tubing 1/8"	10	8	5	8	5	-
Oiled Cotton sq. yds.	1½	1½	1½	1½	1½	½
Bostik comp. tubes	2	2	2	2	2	3
U/S Ground sheets	1	1	1	1	1	1
Glastiken putty lbs.	10	8	8	8	8	8
Metal Ferrules	1	1	1	1	1	-
Insulation taps, 30 ft. Rolls	1	1	1	1	1	1
Copper wire ozs.	2	8 ft.	8 ft.	8 ft	8ft	8ft
Grease G.S. lbs.	1	1	1	1	2	3

MEDIUM TANKS

15	lbs.	Mineral Jelly (Heavy Petrolatum)
20	tubes	Bostik (Latex base cement)
4	yds	Oiled cotton or rubberized cloth
1	qt	Corrosion preventive oil for vehicles and weapons
4	½" x 3/4"	long bolts with 8 washers. (Only two bolts are required with square type air cleaver installation).
3-3/4	Steel sheets 1/8" x 3' x 6'	
2	lbs	Cotton waste or rags to plug cracks.

Necessary bolts and plugs to replace those missing in engine compartment doors, inspection plates in floor of tank, etc.
An extension crank is required to hand crank engines. These may be fabricated with 7/8" round on basis of one per tank company.

LIGHT TANK

10	lbs	Mineral Jelly (Heavy Petrolatum)
25	tubes	Bostick (Latex base cement)
4	yds	Oiled cotton or rubberized cloth
3	Steel sheets 1/8" x 3' x 6'	
1	qt	Corrosion preventive oil for vehicle and weapons

Necessary bolts and plugs to replace those missing in engine compartment doors, engine inspection plates in floor of tank, etc.

2	lbs	cotton waste or rags to plug cracks.

Wodden plug for engine compartment door (Approx 1-1/4")
An extension crank is required to hand crank engine. These may be fabricated with 7/8" round on basis of one per tank company.

PRIMARY DE-WATERPROOFING OF VEHICLES
(Maintenance)

TANKS

1. Remove all oil silk (or rubber) over AIR INTAKE SCREEN, which is behind turret on rear deck. Must be done immediately!

2. If time available - remove exhaust chutes, and replace bolts on tank.

3. Check engine compartment for sea water.
   a. Depress cocks on floor to drain sea water from engine compartment.
   b. Lubricate idlers, track-supporting rollers and other parts as time and supplies allows.

(NOTE: Given to personnel justprior to disembarking on Assault Landing Operation).

ORAN-7 Nov '42

(Over)

Form "B"

PRIMARY DE-WATERPROOFING OF VEHICLES
(Maintenance)

HALF-TRACK AND WHEEL VEHICLES

1. Remove the following waterproofing:
   a. Sheet over radiator.
   b. Oil dip stick.
   c. Oil breather.
   d. Clutch vents
   e. Brake breathers (Master cylinder air vents)
   f. Rocker arm cover vents (GMC).
   g. Fuel pump vent.
   h. Transfer case and axle pressure vents.
   i. Battery filler cap vents.

2. Check engine oil for sea water.

3. Remaining waterproofing will be removed as soon as possible and vehicle completely lubricated.

Form "C"

HEADQUARTERS 1ST BATTALION
1st Armored Regiment
In the Field

SUBJECT: Change in Organization of Battalion Maintenance

TO : Commanding Officer, 1st Bn., 1st A.R.

1. The following changes in organization of the battalion maintenance is recommended, based upon experience gained in the North African campaign.

1 - Captain - Bn. Maintenance Officer
1 - 1st Lt. - Asst Bn. Maintenance Officer, also in command of wrecker section.
1 - Warrant Officer - Tank Maintenance. Chief of Maintenance.
1 - Mr. Sgt. - Bn. Maintenance Sgt.
1 - T/Sgt - ~~M~~/ Chief Mechanic
1 - S/Sgt - Maintenance Supply Sgt.
1 - S/Sgt - Wrecker section chief
4 - Wrecker crews, to consist of the following per crew:
    1 - Sgt - Wrecker Commander
    1 - T/4 - Driver
    1 - T/5 - Asst Driver
    1 - Pfc - Gunner
1 - Radio crew, to consist of the following:
    1 - S/Sgt - Chief Operator
    2 - T/4 - Radio Operators
    1 - T/5 - Driver
    1 - Pfc - Asst Driver
Additional Personnel:

1 - Welder	T/4
4 - Mechanics	T/4
8 - Mechanics	T/5
4 - Truck Driver	T/4
4 - Asst Driver	T/5
2 - Drivers, 1/4 T C&R	T/5

2. The following is a summary of vehicles required:

1 - 6x6 GMC Bin truck with a 1 ton trailer
1 - 6x6 GMC truck for electric welding and power driven tools
4 - 10 ton wreckers
1 - 6x6 GMC tool truck
1 - 6x6 personnel truck
1 - 3/4 ton panel truck - Radio
2 - 1/4 ton C&R cars, liaison

Note: The No. 2 kitchen truck of the Bn. Hq. Co. should be attached to this platoon while in service park.

Changes in organization of Bn. Maint. Cont'd.

3. The following changes in Company Maintenance sections is recommended, per Co.

1 - Maint. tank crewed by Co. Maintenance Sgt.
2 - Mechanics
1 - Driver

Note: The vehicle to carry only hand tool kits and accompany combat vehicles into the combat zone.

1 - 6x6 GMC truck, maintenance. Crewed by:

1 - Sgt Mechanic
2 - T/4 Mechanics
2 - T/5 Mechanics
1 - T/5 Driver
1 - Cpl Motor Clerk

Note: This vehicle to carry company tool set and spare parts, and is to be attached to Bn. Maint platoon when combat vehicles enter combat zone.

4. Considering the number of vehicles in a battalion the above recommended changes are a minimum and not a maximum.

/s/ Troy K. Sandlin
/t/ TROY K. SANDLIN,
Warrant Officer
U. S. Army
Bn. S-5

NOTE: An excellent recommendation, but believe the complete discarding of the halftrack, though feasible, not possible at present.
Advise the following changes to above:
(1) 2 wreckers sufficient
(2) Retain 2 Bn crew Halftracks now on hand and add:
1 tool and welding truck, 2½ ton
1 spare parts truck, 2½ ton
(3) Have Bn Motor Officer; 1 Warrant Off Asst, and adjust other personnel accordingly.
(4) Retain H/T now on hand in company maintenance
(5) Place maint tank in Bn crew section

R.J.GRONDONA,
Maj, 13th Armd Regt,
S-5, CC/B.

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by authority of Hq AGF 35001 DC 24 Dec 46, by George C Bergen Lt
on 7 JAN, 1947

COMMENTS ON ARMORED DIVISIONS T/O

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COMMENTS FROM OPERATIONS THEATERS ON T/O FOR AN ARMORED DIVISION

1. Quartermaster Units.

a. Col Benson, Chief of Staff, 1st Armd Div, Dec-1942. USA-345.

The present Armored Division....cannot tactically be employed as a unit without the addition of ordnance, maintenance, ammunition companies and quartermaster companies to supply fuel and carry ammunition.

b. Maj Gen E. N. Harmon, C.G. 1st Armd Div, May-1943. USA-23R.

It is strongly recommended that the supply battalion be retained in the Armored Division.

c. Maj Gen Gillam, Jr., C.G. Armored Command, Observer, June-1943.

The supply battalion is necessary to the efficient functioning of the division and should not be deleted from the organization.

d. Maj Gen E. N. Harmon, C.G. 1st Armd Div, Nov-1943. USA-265.

The new organization---I believe there is a big error in it in that there is no supply battalion.

e. Maj Gen Wood, 4th Armd Div, Feb-1944. USA-461.

Recommend that a Ration Breakdown Section be added to the Division Qm Section to be composed as follows: 1 Lieutenant, 1 S Sgt, platoon sgt; 3 Sgts., section foremen; 3 Cpls, section foremen assistants; 21 Technicians, Pfc and pvt included, (2) Butchers 5th, (19) Laborers; 1 truck 2½ ton, cargo, personnel and 29 Carbines.

f. Maj Gen Wood, 4th Armd Div, Sep-1944. USA-789.

The division needs the old supply battalion with two truck companies and a supply section. As it is they have attached truck companies that are not as well trained and are not as familiar with the division as if they had been trained as a part of it. The supply section is required because the Army does not accomplish the ration breakdown.

g. Maj Gen Grow, 6th Armd Div, Nov-1944. USA-993.

One thing that is very critical is the lack of a quartermaster headquarters company or detachment. They took away our supply battalion and of necessity have had to furnish us with two quartermaster truck companies, one white and one colored. These companies have done an excellent job, but we have no personnel for ration break-down. We badly need a supply battalion consisting of two truck companies and a headquarters company. Lacking that, we at least need a quartermaster headquarters

company with sufficient personnel to break-down rations and handle supplies. We also need an additional quartermaster officer to coordinate the work of the grave registration unit attached.

h. Lt Col Boggs, 6th Armd Div Trains, Oct-1944. USA-847.

In addition to the normal organic units in the division trains, the 6th Armored Division had two (2) quartermaster truck companies and one (1) quartermaster gas supply company.

i. Brig Gen White, 2d Armd Div, SGA, Jan-1945. USA-1166.

I believe there should be a certain number of truck vehicles available to carry armored infantry across country with tanks. Truck companies should be an integral part of the division.

j. Col Beam, Observer, Feb-1945. USA-1256.

It was believed that the quartermaster battalion should be organic in the armored division, and that two more truck companies should be incorporated.

k. Commanding Generals of the 12th and 14th Armd Divs, March-1945. USA-1304.

The commanding generals of both the 12th and 14th Armored Divisions decried the lack of quartermaster truck companies in the armored division. Both emphatically stated that two companies should be provided as organic units of the armored division. The former supply battalion was what was actually desired through the requirement for a full strength headquarters company in addition to the two truck companies was questioned. They pointed out however that a quartermaster headquarters detachment of sufficient size should at least be provided to insure adequate ration break down personnel. At present this work is having to be accomplished by special duty personnel from the combat elements of the division.

8. Engineer Units.

a. Brig Gen Oliver, SGS, 1st Armd Div, Dec 1942. USA-648.

In this theatre the engineer bridge company need be only half as large as at present, additional equipment being available in army depots. Also for this theatre one of the engineer work companies could be eliminated.

b. Maj Gen Harmon, G.C., 1st Armd Div, Nov-1943. USA-868.

I think it is a mistake that there is a bridge company. In Tunisia we used the bridge company continually. We couldn't have fought successfully in Tunisia without the bridge company. The theory that higher headquarters will furnish such companies will fail because they can't always plan to have them where needed.

c. Maj Gen Wood, C.O. 4th Armd Div, Sept 1944. USA-739

There is an urgent requirement for the old engineer battalion with an extra letter company and the old bridge company. The division cannot move without an attached engineer battalion from Corps. It is better to have a bridge company that is trained with the outfit and has had considerable experience in preparing bridges for armored equipment.

d. Col George M. Dean, Observer in ETO, Feb 1945, USA-1339.

The Sixth and Seventh Armored Divisions felt that the bridge company is not an essential part of the engineer battalion. The Sixth Army Group as a whole had not been faced with severe bridge problems and preferred attachment. The Second and Third Armored Divisions, however, requested the old type organization and the retention of the bridge company. As the bridge company is not an armored component, there is a certain lack of cooperation when the company is furnished by army corps.

2. Recovery and Maintenance Units.

a. Brig Gen Oliver, CCB, 1st Armd Div. Dec 1942. USA-343

In general it appears that the division echelons for maintenance and evacuation are excessive. They should be reduced in size and supplemented when needed by Corps and Army troops.

b. Col Benson, 1st Armd Div, Dec 1942. USA-343

Recovery of disabled vehicles is practically nonexistant. Recovery vehicles issued to and used by Battalion, Regimental, and Division maintenance companies would improve and might solve the problem.

c. Col Mathews Observer, Feb 1943. USA-30R.

Organization for recovery and maintenance of vehicles within the division is inadequate. Must have tank recovery vehicles capable of carrying tanks and loading them.

d. Col Webb, Lt Col Simmons and Lt Col Jarrell, Hq, 12th Army Group, Oct 1944. USA-868.

During a fast moving operation, the division should have maintenance radio net, and this applies particularly to armored divisions. It would facilitate our locating units of the maintenance battalion and help them to locate supported units. When emergency parts are needed, they could be secured more rapidly. Locations of abandoned or destroyed equipment could also be given quickly.

3. Military Police Units.

a. Lt Col Cochran, 1st Armored Division, May 1943, USA-23R

Military Police were adequate only for patrolling evacuating

evacuating columns and in keeping a steady flow of traffic to the Corps P.W. Inclosure. In this they did an excellent job. Armored divisions must be augmented by higher echelons if prisoners in any quantity are anticipated. Traffic circulation and control was excellent within the division. This was due to excellentraining of the MP Company (improvised from authorized overstrength). A proposed T/O for a division MP Company organized along the same lines as the improvised company is shown below;

M.P. Platoon (2 Combat Teams)

1 Lieutenant, Platoon Commander
1 S Sgt, Platoon Sergeant
3 Sgts, Squad leaders
3 Cpls, Squad leaders
9 Tec 5's, Military Police
15 Pfc's and Pvts, Military Police
10 Pfc's, Chauffeurs.

b. Maj Gen Gillam Jr. C.G. Armd Center, Aug 1943. USA-220.

A military police company is the minimum element of this type required to serve the armored division.

c. Combat Observers, 12th Army Group, Sep 1944. USA-844.

The T/) authorization of MPs for a division is inadequate. We found that approximately 140 MPs per division are required. Initially the division MPs were well trained but replacements could not be requisitioned as the divisions were overstrength. This necessitated the use of untrained men as there was no time for training during combat. The loan of a company of MPs to corps by army was unsatisfactory as the corps provost marshal could not make changes in personnel assignments and grades.

d. Observers Reppert, 12th Army Group Sep 1944. USA-816

The MP platoon was not sufficient to perform their normal duties as well as handle prisoners, so an additional 80 men were added from the service units. Even this was insufficient at times.

5. Anti-Aircraft Units.

a. Captain Feck, Royal Netherlands Army, Aug 1942. USA-106.

The anti-aircraft protection of an Armored Division consists of the .30 and .50 machine guns on tanks and vehicles. In a bivouac, for instance in the woods, no protection is available, except camouflage and dispersion, as the machine guns cannot fire.

b. Col Maraist, Artillery Officer, 1st Armd Div, Dec 1942, USA-343.

Anti-aircraft defense in an armored division is sadly deficient.

c. Major Croker CAC, Observer, Hq, AGF, Feb 1943. USA-162

Antiaircraft units should be assigned as organic units to all divisions and be permitted to train with these divisions after completing their training at the Antiaircraft Training Centers.

d. Maj Gen Gillam Jr. C.G. Armored Center, Aug 1943 USA-220.

Both anti-aircraft and anti-tank elements should be an organic part of the armored division.

e. Colonels Archer and McChrystal, Observers Hq, AGF, Aug 1943 USA-223.

Suggested changes in organization are inclusion of antiairdraft units as organic parts of both the infantry and armored divisions.

f. Colonel Dean, Observer, Feb 1945. USA-1333.

General Rose stated that he thought the Armored Division should have an organic Antiaircraft Artillery Battalion.

6. Tank Destroyer Units.

a. Col Benson, 1st Armd Div, Dec 1942. USA-343.

It is the Division Commander's opinion that a Tank Destroyer Battalion should be a part of the division.

b. Lt Col Matthews, Observer, Hq, AGF, Jan 1943. USA-130.

The Chief of Staff, 1st Armored Division stated that the division commander was continually tamed to retain the 701 TD Bn as it is an attached unit and not considered part of the division by higher staffs. I believe that consideration should be given to making the TD Bn an integral part of the Armored Division.

c. Major General Gillam Jr. C.G. Armored Center, Aug 1945. USA-220.

Both anti-aircraft and anti-tank elements should be an organic part of the armored division.

d. Colonels Archer and McChrystal, Observers Hq, AGF, Agf 1943 USA-223.

Important suggestions for changes in organization are, inclusion of tank destroyer units as organic parts of the Armored Division.

e. Major General Harmon, C.G. 1st Armd Div. Nov 1943. USA-265.

I feel that a tank destroyer battalion should be permanently

assigned or attached to the armored division and not continually changed. The tank destroyer technique is different when serving with an armored division from that used when serving with an infantry division. We have found trouble making changes of battalions and use destroyers that have been working with infantry. We have always found that battalions that have worked with us want to stay with us, want to wear our shoulder patch, they get some of the esprit de corps of the division and develop team play with us.

f. General Grow, 6th Armored Division, Nov 1944. USA-993

Additional organizations that I feel are essential and should be made part of the division are; a battalion of tank destroyers (SP) and a battalion of AAAW self-propelled. We have had them all along and we still have them. If we don't have the TD's we should have an additional battalion of M4A3 tanks with 76-mm guns, which would provide us with essential anti-tank fire and would be better.

g. Colonel Dean, Observer, Feb 1945. USA-1333.

General Rose, Third Armored Division recommends an organic Tank Destroyer Battalion.

7. Reconnaissance Units.

a. Col I.D. White, CCB, 2d Armored Division, Sep 1943, USA-14R.

I think the division should have a RCN regiment and that we should do away with the regimental RCN companies. The regimental RCN now actually works under the CC. This move would simplify RCN training if one officer was in charge. The present regimental RCN company seldom equals a company of the RCN battalion. The difference is in the training. Two possible basic organizations for the proposed RCN companies are: (a) A two battalion regiment, each battalion with two RCN companies, and one tank company. (b) A three battalion regiment, one battalion to be composed of two tank companies, and the other two battalions each to be composed of two RCN companies.

b. Maj Gen Brooks, CG 2d Armd Div. Apr 1944. USA-431.

The new light armored division should have a reconnaissance element for each of their combat commands.

c. Maj Gen Wood, CG 4th Armored Div, Sep 1944. USA-739.

Add one lettered company to each Infantry, Tank(medium Co.), and Reconnaissance Battalion.

8. Artillery Units.

a. Colonel Marquat, Arty Off, 1st Armd Div, Dec 1943. USA-343

Would prefer to have 1 battalion of 155mm guns in an armored division. Need more artillery.

b. Col I. D. White, COB, 2d Armd Div, Sep 1943. USA-14R

One of the three 105mm battalions of field artillery in the division should be replaced with the 155-m howitzer battalion.

c. Col Collier, CO 66th Armd Regt. Sep 1943. USA-14R

We want a battalion of 155mm guns in the division--some long range stuff.

d. Lt Col Exton, CO 78th FA Armd. Sep 1943. USA-14R

I believe in two artillery battalions each having two 105-mm batteries and one 155-mm howitzer battery in the division.

e. Col Nightower, 1st Armd Regt. Nov 1943. USA-265.

I am afraid there is insufficient artillery in the new division. I would like to see the division artillery made up of three battalions of 105s plus one battalion of 155 guns and one of 155 howitzers. If there could be only one additional battalion of artillery it should be the 155 howitzers.

f. General Gaffey, 2d Armored Division. Undated, USA-413.

General Gaffey favors tractor drawn artillery over self-propelled for armored units.

g. Maj Gen Wood, 4th Armd Div, Sep 1944. USA-739.

Add one battalion of 155mm howitzers to the Division Artillery. One battalion of towed 155mm howitzers (Corps Artillery) has been working with each combat command and is indispensible.

h. Maj Gen Grow, C.G. 6th Armd Div, Nov 1944. USA-993

We definitely need a medium artillery battalion in the division. They have always attached one to this division and it might as well be a part of the division.

i. Maj Gen Rose, 3d Armd Div, Dec 1944. USA-1207/

The current organic artillery is considered inadequate for support operations of an armored division. The division artillery should consist of:3 armored battalions of 105 howitzers, as currently organized; one battalion of 155 howitzers, tractor drawn; and one battalion of 155 guns 155 guns (SP).

j. Brig Gen Smith, CG 19th Armd Div, Mar 1945. USA-1304.

It is highly desirable that the division be provided with a battalion of (SP 155mm guns or howitzers.

k. Colonel Kurtz, 14th Armored Division Artillery Officer, Mar 1945. USA-1304.

The division definitely needs a battalion of longer range artillery than the 105 howitzer. Should be either the 155 howitzer or 155 gun (SP).

l. Brigadier General Erwin, CCA, 12th Armd Div, Mar 1945. USA-1304.

The divisions needs an additional medium field artillery battalion, (not essential however).

m. Maj Gen Allen, CG, 12th Armd Div, Mar 1945. USA-1304.

The division should have a self-propelled battalion of 155mm guns or howitzers in addition to the current organic artillery, this is especially desirable when the division is operating independently.

n. G-3, 5th Armd Div, Mar 1945. USA-1348.

The M-12, 155mm gun with its great range and ability to keep up with the tanks is an invaluable weapon in rapid moves. A battalion of these guns should be an organic part of an armored division.

9 Infantry Units.

a. Brig Gen Oliver, CCB, 1st Armd Div, Dec 1942, USA-343.

The division includes too small a proportion of infantry to tanks. I would decrease the number of tank battalions to four and increase the infantry to the same number. However, our division should be more flexible as to organization, depending on the theatre in which it is used. The proposed organization by battalion would promote flexibility. The number and proportion of battalions of tanks, infantry and artillery can readily be varied to meet the particular situation.

b. Colonel Mathews, Observer, February 1943, USA-302.

There is too small a proportion of infantry to tanks.

c. Maj Gen Watson, ETO, Apr 1944, USA-441.

Another Armored Infantry Regiment per armored division is needed to hold ground secured by tanks.

d. Maj Gen Wood, 4th Armd Div, Sep 1944. USA-739.

Add one lettered company to each Infantry, Tank (medium Co,), and Reconnaissance Battalion. This larger battalion is needed to operate effectively - requires little extra overhead. It would permit a better balance of strength between combat commands and facilitate a shuffle of troops.

e. Maj Gen Grow, 6th Armd Div, Nov 1944. USA-993.

We need more infantry. Personally I'd like to see about three more battalions.

f. Maj Gen Rose, 3d Armd Div, Dec 1944. USA-1207.

The new light division is little more than one combat command of this division. Granted that additional infantry is necessary for an armored division, it is stupid to think that one can increase the infantry of an armored division by reducing the number of tanks.

The amount of infantry should be increased by the addition of an additional motorized (truck) infantry regiment, the tank strength should remain the same.

g. Maj Gen Oliver, 5th Armd Div, Dec 1944. USA-1207.

The infantry should be an integral part of the tank platoon. To this end it was recommended that each platoon should have, in addition to its currently prescribed five tanks, one to two half-tracks of infantry. This infantry was to be in addition to the three battalions now provided.

h. Maj Gen Collins, VII Corps, Jan 1945. USA-1166

The big armored division is better than the smaller ones. They need more infantry however. I believe there should be one tank company with each infantry regiment as an integral part.

i. Brig Gen White, 2d Armd Div, CCA, Jan 1945. USA-1166

I believe there should be a certain number of truck vehicles available to carry armored infantry across country with tanks. Additional infantry can ride in trucks. Truck companies should be an integral part of the division. Also I believe the regimental set-up is much better than the independent battalions and is much easier to develop "esprit de corps", and the administration is much easier.

j. Maj Gen Oliver, 5th Armd Div, Jan 1945. USA-1166.

I think infantry should be a part of a tank battalion.

k. Lt Col Bowley, G-3 XII Corps, Jan 1945. USA-1301.

Experience has shown that our armored divisions need at least 100% increase in the infantry complement. They should have a more effective tank gun. (A complete description of a recommended composite division is attached hereto as Appendix "A".)

l. Col Dean, Observer, February 1945. USA-1333.

All armored divisions interviewed desired the incorporation of another infantry regiment or three additional infantry battalions in the armored division. The flexibility of the separate infantry battalion is desirable, but they should be increased from three battalions per armored division to six.

m. Brigadier General Smith, CG, 14th Armd Div, Mar 1945, USA-1304.

The new armored division is definitely short in infantry. There should be at least one and probably two additional infantry battalions in the division.

n. Col Karlstad, CO CCA, 14th Armd Div. Mar 1945, USA-1304.

The armored division should have three times more infantry than it currently has.

o. Col Huddleson, CO, CCR, 14th Armd Div, Mar 1945, USA-1304.

The Armored Division should have at least twice as much infantry and possibly the proportion of one tank battalion to three infantry battalions would be more nearly correct.

p. Colonel R. Gordon, CO, CCR, 12th Armd Div, Mar 1945, USA-1304.

The ratio of one tank unit to three infantry units is about correct. The division should be organized entirely of infantry battalions with each battalion having one tank company organic.

q. Brig Gen Ernis, CG CCA, 12th Armd Div. Mar 1945, USA-1304.

The armored division needs revamping. Build up from the new division. Probably the best proposition would be three infantry battalions to each tank battalion. The present division might well be used by adding one infantry battalion; the infantry battalions consisting of four companies of four rifle platoons each. In any event there is a need for more infantry.

r. Maj Gen Allen, CG, 12th Armd Div, Mar 1945, USA-1304.

At least two additional infantry battalions were required in armored division.

10. Command and Staff.

a. Col Warner etal, Observers, March 1945. USA-165.

Two officers in each of the G-2 and G-3 sections of the division headquarters are not sufficient. Units observed had drawn additional personnel from their troops to augment these sections. IT IS RECOMMENDED THAT NOT LESS THAN 3 OFFICERS BE PERMANENTLY PLACED IN THE G-3 and G-2 SECTIONS.

It is recommended that, as in the case of the warrant officer, Supply, and the warrant officer, Motor Maintenance, of the infantry regiment, the communications officer of the infantry battalion be a warrant officer who will remain in this assignment for the performance of the technical work required.

The Commanding General, 2d Armored Division and several staff officers 1st Armored Division felt the combat command echelon was unwieldy and should be eliminated. Either the regimental echelon or the Combat Command echelon should be eliminated.

b. Lt Col M. M. Brown, G-2, 1st Armd Div, May 1943, USA-209.

The organization of the G-2 was found to be inadequate dut to the fact that it was premised upon the conception that an armored division would be actively engaged for a maximum of 3 to 4 days. After many trials, the section was increased by one stenographer and 2 officers (Captain and 1st Lieutenant). Organization as prescribed was:

1 Lt. Col.
1 Maj.
2 M/Sgt
1 T-4 Stenog.
1 T-4 Draftsman

Recommended T/O for G-2 Section, to be:
Combat Command Headquarters.

G-2	Major
Asst G-2	Captain
G-2 Sergeant	Technical Sergeant
Chief Clerk	Technician 4th Grade
Asst Clerk)	Private First Class
Messenger)	

c. Lt Col Ferde, G-2 2d Armd Div, Sep 1943, USA-148.

The T/) for the G-2 section of an armored division is wholly inadequate. I recommend a T/) to be as follows:

1 Lt Col	G-2
1 Major	General Asst to G-2
2 Captains	General Asst to G-2
1 M/Sgt	Chief Clerk
1 S Sgt	Stenographer
1 Tec 4	Stenographer
1 Tec 4	Draftsman
1 Tec 5	Draftsman
1 Tec 4	Order of battle clerk.
And to be NORMALLY attached.	
1 Lieutenant	Photo-interpreter

Plus a general broad authority to secure the service of any available talent suitable for any given prospective campaign.

The division should have on its T/O for Public Relations;

1 Captain,
1 Typist
1 or more qualified photographers.

d. Maj Gen Harmon, 1st Armd Div, Nov 1943. USA-265.

I am in sympathy with cutting down headquarters through out. We can reduce and still function. I used every bit of the Division at Mateur. I could not have fought Mateur with the new Division. I would have had to have gone more slowly and to have gotten more help from the rear.

e. Maj Gen Wood, 4th Armd Div, Sep 1944. USA-739.

The Reserve Commander's staff should be increased. The present staff of two majors is inadequate to handle the troops that are often attached (one infantry, tank and field artillery battalion, and 1 TD company).

Discontinue present system of having only one Brigadier General per Armored Division; there should be three, one with each combat command and one artillery commander.

f. Maj Gen Brooks, 2d Armd Div, April 1944. USA-431.

T/O of 8 January 1942 provides:

1 Lieutenant Colonel
1 Major
1 Master Sergeant
2 Tec 5's - draftsman, clerk or stenographer.

At the present time this section is organized with:

1 Lieutenant Colonel, A.C. of S., G-2
1 Major - executive, administration and general supervision of section.
1 Captain - terrain, defenses, etc.
1 M Sgt - chief clerk
1 Tec 4 - Clerk and stenographer
1 Tec 5 - draftsman
1 Tec 5 - order of battle clerk
2 basics - clerk typists.

Additional personnel under direct control of the A.C. of S., G-2 are

Public Relations: 1 Lieutenant
3 Tec 5's (2 reporters, typists;
1 photographer-reporter).

g. Observer with 3d Armored Division, October 1944, USA-816.

The G-1 should have an assistant to take his place while the G-1 is forward with the headquarters commandant.

The two officers and three enlisted men that are organic to the section were not sufficient. It is physically impossible in an operation for this limited personnel to operate on a 24 hour basis. In combat command headquarters, the S-2 and technical sergeant were entirely inadequate, this section should have one additional officer and two additional enlisted men.

One additional officers is needed in the G-3 staff, since the G-3 is habitually with the commanding general.

h. Maj Gen Grow, CG. 6th Armd Div, Nov 1944. USA-993.

We should have a brigadier general as assistant division commander, the same as the infantry division. The division artillery officer should be a brigadier general. He has more artillery pieces to handle than the infantry division artillery officer and should have similar rank.

As for the organization of the combat commands, the principle behind such a set-up I believe is sound in that it provides for greater flexibility. However, the higher commanders seem to consider that we have three combat commands of equal strength and so employ us. Personally I will take it either way, but in view of the higher command's methods of employment I believe the reserve command should be organized on the same basis as the combat commands.

i. Lt Col Haerem, Div Surgeon, 12th Armd Div, Mar 1945. USA-1304.

A medical section should be provided CCR of an armored division. At present this section has to be improvised. There is not any requirement for a medical section in division artillery headquarters. This section could well be utilized to form the one required for CCR.

j. Commanding Generals of the 12th and 14th Armored Divisions. Mar 1945. USA-1304.

In view of the higher commands policy of employing the divisions with three balanced combat commands, a suitable headquarters and staff for CCR is essential. At present, the staff has to be improvised from personnel needed elsewhere.

k. Colonel Barnes, C. of S. 12th Armored Division. Mar 1945 USA-1304.

No assistant has been provided for one of the most important general staff sections, namely G-3. G-3 air, during operations is busy coordinating air support and is of little aid to G-3.

An assistant to the division judge advocate should be provided to act as trial judge advocate for all division general courts martials. Combat officers acting as trial judge advocates do not have the time to prepare cases.

11. Combat Command vs. Regimental Organization.

a. Brigadier General Robinett, 1st Armd Div, Dec 1942, USA-343.

It is suggested that the organization of the Armored Division be re-studied. It is believed to be over-strength in the rear echelon and improperly constituted into Combat Commands. In the present organization extreme flexibility has destroyed a proper understanding of all personnel with which might fall under the command of a single individual. It is also believed that the Armored Division is too large, particularly in this Theatre. It might not be in others, where conditions are different.

While the Regiment did not function as such in the operations under observation, it did direct operations at X-Ray Beach and the advance on Oran, and did act as the coordinating agency at the front when the situation made this mandatory. It further demonstrated its value as a training agency, as can be seen by the performance of its subordinate elements, and by the performance of its staff, which played an all-important part in the planning and the execution of operations by CC/B.

b. Brigadier General Oliver, CCB, 1st Armd Div, Dec 1942, USA-343.

I am convinced that our organization is defective. In these operations the staffs of the 13th Armored Regiment and of Combat Command "B" have been combined. The tank battalions as well as the two infantry battalions have been used as separate battalions. The combination of the two staffs has not worked badly in this instance, due to its relative permanence. As a temporary expedient of a few days duration I do not believe that it would work at all well. Either the combat command or the regimental headquarters should be eliminated. My own solution would be to eliminate the regimental organization altogether and have both tanks and infantry independent battalions such as exist in the artillery. Division headquarters should then include an infantry section, similar to the present artillery section, to supervise the training of the infantry and a tank section to supervise and coordinate training of the tanks. The combat command should include a headquarters company to replace the present inadequate detachment and a reconnaissance company replacing the present regimental reconnaissance company. Each battalion should have its own maintenance and supply, with supporting echelons in the division as at present.

c. Colonel Warner and Lt Col Wilson Observers, Mar 1943, USA-165.

The Commanding General, 2d Armored Division, and several staff officers 1st Armored Division felt the combat command echelon was un-

wieldy and unnecessary. Either the regimental echelon or the Combat Command echelon should be eliminated. The Commanding General, 2d Armored Division, felt the division was too large and should not exceed approximately 10,000 men. He believed further the tank battalion could very well contain mixed types of tanks so lighter types could operate under a base of fire.

d. Brig Gen Rose, C.G.B. 2d Armored Division, Sep 1943, USA-14R.

Based on my experiences in Sicily and Tunisia, I have seen nothing to indicate there is anything wrong with our present organization. I do consider that the combat command staff should be increased to provide an understudy for each position. I suffered considerably from this lack--one of my staff would get sick and I would have no one to take his place.

e. Brig Gen White, 2d Armored Division, CCA, Jan 1945, USA-1166.

I believe the regimental set-up is much better than the independent battalions and is much easier to develop "esprit de corps", and administration is much easier.

f. Colonel Dean, Observer ETO, Feb 1945, USA-1333.

The second and Third Armored Divisions want to retain the old type of organization, principally because they have fought successfully under the old set up. In this connection, General Rose, Third Armored Division, presented the following requirements:

(1) An organic Antiaircraft Artillery Battalion.

(2) An organic Tank Destroyer Battalion.

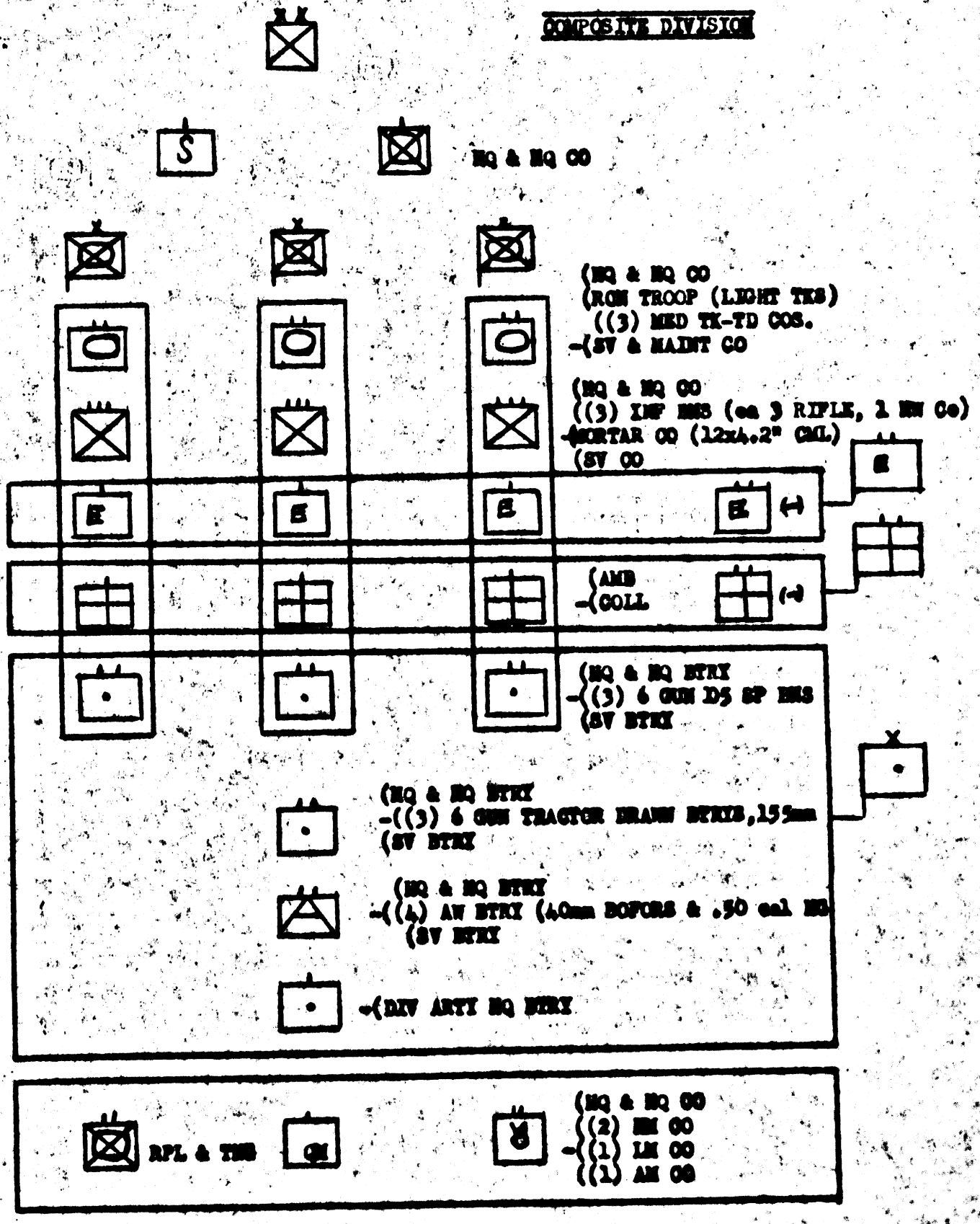
(3) An organic 155-mm Self-Propelled Gun Battalion..

(Other divisions preferred this battalion to be composed of 155-mm Howitzers, desiring the high trajectory provided by the howitzer. It is believed that the Third Armored Division specified the 155-mm gun, as they have campaigned so successfully with the 991st Field Artillery Battalion, composed of the 155-mm Self-Propelled Gun. M 12.)

Other commanders interviewed favored basically the same organization.

APPENDIX "A"

COMPOSITE DIVISION



Comments of Observers in ETO concerning Tank Battalion Organization

Headquarters Company

Reconnaissance Platoon -

U.S.A.-333, Jan-1944, Lt Col King, 701st Tk Bn. The pioneer platoon needs some additional equipment. Three dump trucks should replace the present 3/4 ton. We need a bulldozer like the D-4 type. An additional officer is needed to act as the company S-3.

U.S.A.-417, undated, Lt Col Hammack, 751st Tk Bn. Platoon is too small in men and vehicles to accomplish its mission.

U.S.A.-678, Jul-1944, Lt Col Welborn, 70th Tk Bn. Substitute the M8 recn car for the half-track. Add a SCR 510 to all vehicles in recn platoon. All vehicles in recn platoon should mount a .30 cal MG light. Add one SCR 625 (mine detector) to each vehicle in recn platoon.

U.S.A.-678, Jul-1944, Lt Col Pickett, G-4 9th Div. Add 1 truck 2½ ton for supply and maintenance.

Maintenance Section -

U.S.A.-142, Sept-1943, Lt Col Millyard, 67th Armd Regt. The Bn Hq Co Maint Sect should be identical with that of a line company. The T/O at present forces its own violation.

U.S.A.-142, Sep-1943, Col White, 2d Armd Div. There should be a Maint Sect in the Bn Hq Co identical with that in a line company.

U.S.A.-142, Sep-1943, Col Collier, 66th Armd Regt. The Maint Sect of the Bn Hq Co should be identical with that in a line company.

U.S.A.-419, Apr-1944, Lt Col Davis, 760th Tk Bn. Need 1 additional 3/4 ton weapon carrier, 1 additional 2½ ton truck for spare parts, fuel and lubricants.

U.S.A.-600s, Mar-1944, Maj Belvin, 750th Tk Bn. Need an additional 2½ ton truck for heavy spare parts and a 3/4 ton weapons carrier.

U.S.A.-678, Jul-1944, Lt Col Kupfer, 744th Tk Bn. Crews of T5 recovery vehicle should be issued binoculars.

U.S.A.-1017, Oct-1944, Hq, 12th Army Group. Not enough transportation for carrying necessary spare parts. Substitute the 2½ for the maint half-track and add one 2½ to the service company for spare parts.

Assault Gun Platoon -

USA-812, Jul-1944, Lt Col Dickey, 757th Tk Bn. Need at least 1 additional ¼ ton truck for the assault gun platoon, also 1 additional SCR 510.

USA-812, Jul-1944, Lt Benson, 757th Tk Bn. Need a 7 man gun crew instead of 5. Recommend an additional officer, preferably with FA experience. Should have a SCR 510 radio to be used with an additional ¼ ton truck.

Headquarters Company -

USA-142, Sep-1943, Lt Col Quillian, 66th Armd Regt. I suggest that the assault gun platoon be commanded by a 1st Lt, with a 2d Lt as second in command.

USA-548, Dec-1943, Major McKnight, 6th Armd Regt. Add (3) ¼ ton 4x4 trucks to Bn Hq Co for platoon leader use.

USA-419, Apr-1944, Lt Col Davis, 760 Tk Bn. Eliminate mortar platoon and use personnel as tank and howitzer replacements.

USA-461, Feb-1944, Maj Gen Wood, 4th Armd Div. Under T/O 17, 15 Sep 43, recommend additional equipment as follows; 2-¼ ton trucks, 4-2½ ton trucks, 2-3/4 ton trucks, W.C. and 3-1 ton trailers.

USA-678, Jul-1944, Lt Col Wolbers, 70th Tk Bn. Add 2 motorcycles for traffic control.

USA-718, Jul-1944, Col Crenk, 2d Armd Gp. Each Tk Bn Hq should be equipped with one ton cargo trailer to transport extra maps, tents tables and chairs now authorized and a complete set of field manuals.

Service Company -

USA-419, Apr-1944, Lt Col Hammack, 751st Tk Bn. Delete both 81mm mortars from Service Company.

Maintenance Platoon -

USA-419, Apr-1944, Lt Col Hammack, 751st Tk Bn. Add one truck, welding M2 or M1A1.

Medical Detachment -

USA-333, Jun-1944, Lt Col Hammack, 751st Tk Bn. 4 wheeled ambulance in place of one armored ambulance. We want our dentist back from the tank Group.

USA-419, Apr-1944, Capt Iler, 760th Tk Bn. Replace half-track ambulance with Dodge cross country ambulances.

Med Det Contd.

USA-142, Sep-1943, Capt Erbes, 67th Armd Regt. Eliminate one each of chests #1 and #2. We need a peep equipped with an SCR 510 radio. There should be a SCR 510 or 528 in the ambulance. The Medics need field glasses and should be so equipped. We use an unauthorized trailer to carry some medical equipment.

USA-419, Apr-1944, Lt Col Layne, 758th Tk Bn. A dentist is required.

USA-344, Sep-1944, Capt Hanlin, 30th Inf. Need an SCR 300 for use from Bn Aid Station to front line companies, would speed evacuation of casualties.

USA-345, Dec-1942, Major Samuels, 13th Armd Regt. Facilities should be provided for treating casualties under blackout conditions. The CP tent would be satisfactory.

USA-345, Dec-1942, Brig Gen Robinett, 1st Armd Div. The 1/2 track has not proved satisfactory as a Medical vehicle in regimental echelon. The wheeled ambulance will better serve the needs.

USA-345, Dec-1942, Major Samuels, 13th Armd Regt. Three wheeled type ambulances should be placed in the Hq section of the detachment. Half-track ambulances are not satisfactory.

USA-142, Sep-1943, Maj Shumberry, 41st AIR. The present T/O is inadequate and it is recommended that the following be substituted for the present T/O for enlisted personnel of this Med Det, (Bn Section). 1 S Sgt, 1 Sgt, 1 Cpl, 2 Tec 5's, surgical Techns, 1 Tec 4 motor Mess-Sgt, 6 drivers, (4 Pfc's - 2 Pvt's), 10 platoon aid men (4 Pfc's - 6 Pvt's), 1 Pfc liaison agent, 3 Pfc Medical Techns, 1 Pfc Clerk.

Reconnaissance Company -

USA-345, Dec-1942, Capt Frankel, 13th Armd Regt. Spotting telescope of from 10 to 20 power should be supplied on a minimum basis of one per platoon. A sniper's rifle with optical sight would be very useful in each scout section. A SCR 510 radio should be provided for each vehicle, plus an extra SCR 196 radio per platoon. At least (4) Walkie-Talkie sets per platoon are needed to permit communication from two CP's. Four more peeps per platoon, each equipped with a .30 cal MG and SCR 510 radio should be added to the company.

USA-345, Dec-1942, Brig Gen Robinett, 1st Armd Div. The Walkie-Talkie radio (536-3) should be included in the equipment of reconnaissance vehicles and issued at the rate of 2 per assault gun and mortar section. Certain personnel in rem platoons should be equipped with 8 or 10 power glasses or perhaps a telescope.

Rcn Co Contd

USA-345, Dec-1942, Board of Officers, 13th Armd Regt. Reconnaissance vehicle commanders should be equipped with shoulder holster.

USA-142R, Sep-1943, Col White, 2d Armd Div. The half-track won't do for reconnaissance. We need an armored car for this purpose.

USA-736, Jul-1944, Lt Col Cole, 1st Armd Regt. Rcn Co's should be provided with T-2's to facilitate combat recovery.

Tank Company -

USA-265, Nov-1943, Lt Col Cairnes, 13th Armd Regt. Believe the company commander's half-track should not have been cut out.

USA-265, Nov-1943, Lt Col Carr, 1st Armd Div. The present organization provides insufficient maintenance vehicles in both the Bn and Co.

USA-535, Jan-1944, Lt Col King, 701st Tk Bn. An additional officer is needed to act as Co S-3. All companies need a 2000 watt generator for charging batteries, furnishing lights for maintenance at CP's at night. We need very badly better observation instruments.

USA-345, Dec-1942, Brig Gen Robinett, 1st Armd Div. Inclusion of AT Guns in each Tk Co is highly desirable if close cooperation on the battlefield is to be had. All tanks should be provided with a mortar to be fired from inside. This applies especially to smoke. Existing messing facilities are not satisfactory in campaign. Each vehicle should be provided with a small heater. Dual-mount .50 cal MG with AA ground mounts should be placed in all command vehicles from section to the regiment.

USA-345, Dec-1942, Board of Officers, 13th Armd Regt. All tank crew members should be armed with pistol equipped with shoulder holster.

USA-142R, Sep-1943, Lt Col Quillian, 66th Armd Regt. Within the tank company, the M-2 half-track is not worth much and could be replaced by one or two ¾ ton peeps issued in place of each half-track eliminated.

USA-419, Apr-1944, Lt Col Hammack, 781st Tk Bn. Delete 81mm mortar from Tank Co.

USA-678, Jul-1944, Lt Col Welborn, 70th Tk Bn. Add 2 motorcycles per company for traffic control.

USA-678, Jul-1944, Lt Col O'Rourke, 79th Inf. Supporting Tank Company should have three M4 tanks equipped with angle dozer in hedgerows.

USA-739, Sep-1944, Maj Gen Wood, 4th Armd Div. Add a Medium Company to facilitate a shuffle of troops and permit a better balance of strength between combat commands.

APPENDIX "B"

Tank Co Contd

USA-718, Jul-1944, CG 5th Army. A 3/4 ton or 1½ ton truck should be supplied each Co. Would reduce taking of supplies to different units when operating as one unit. Another 1/4 ton truck should be made available for use as rem.

USA-736, Jul-1944, Col Bowse, 13th Armd Regt. Urgently recommend that the Co Comdr's tank be equipped with SCR 193 radio--that being the most reliable set available in the army.

USA-718, Jul-1944, Col Crenk, 2d Armd Gp. It is believed that a 3/4 or 1½ ton truck should be supplied each company. It would facilitate taking supplies to the different units of the company when it is not operating as one unit.

USA-877, Mar-1944, Col Borden, Hq AGF. Tank Dozers should be in every Tk Co. It was recommended that there should be one tank dozer in each platoon and two in every tank Co Hq.

USA-855, Jan-1944, Col Devoer, Hq AGF. Need the T-2 in the companies.

USA-812, Jun-1944, Lt Col Dickey, 757th Tk Bn. Need at least 1 additional 1/4 ton truck for each Tk Co, need 1 additional SCR 510 radio per Tk Co for liaison purposes, should include SCR 536 radio sets, (2 to each platoon and 1 for the Co Comdr) in T/E.

USA-906, Oct-1944, Hq U.S. Army Forces. Tk units should have a minimum of one tank dozer per co. Co's and preferably platoons should have one tank (flamethrower). T/O should be changed to authorize a tank-liaison section in each co hq (at least one man per tk) who will stay with the co.

Tank Platoon -

USA-142, Sep-1943, Lt Col Millyard, 67th Armd Regt. The radio tender in the tank has no rating. He should be Tec 5.

USA-419, Apr-1944, Lt Col Ewing, 1st Tk Gp. Need one extra tk with rated crew for each tk platoon.

USA-441, Apr-1944, Gen. Watson. Need (2) 536 radios per platoon for tank-infantry communication.

USA-600c, Mar-1944, Lt Col Folber, 755d Tk Bn. Each platoon needs an extra tank and crew for replacements.

USA-235, Nov-1943. AGF Board Report. Tank crews should be armed with pistols and shoulder holsters. There should be one carbine and one Tommy gun in each tank. Should have 28 hand grenades instead of 12.

Tk Platoon Cont'd

USA-309, undated, Board of Officers, 70th Tk Bn. Considerable switching of radios is necessary to get correct proportion of 508,528 and 538's. It was felt that all platoon tks should have transmitters (SCR-525) especially when in close country where visual contact is hard to maintain.

USA-312, Jul-1944, Lt Col Dickey, 757 Tk Bn. Need 2 SCR 536 sets in each tk platoon. T5E2 is not satisfactory for tank crews, recommend the 45 pistol. Leave the T5E2 as a vehicular weapon, 1 per tank. Where we have air superiority, exchange the .50 for the .30 MG at 4 tks per platoon for use against ground troops.

USA-308, Oct-1944, US Army Forces. Platoons should have one flame-thrower (M4-5) (Tank mounted).

TANK BATTALION.

USA-265, Nov-1945, Col Hightower, 1st Armd Div. For the 57mm AT gun, the Dodge 6x6 1½ ton truck should be the prime mover.

USA-258, May-1945, Major Crendom, 13th Armd Regt. An armored, radio mechanic and artillery mechanic should be included in all echelons of maintenance for units having a larger number of radios, machine guns and guns of 75mm or larger.

USA-343, Dec-1942, Brig Gen Robinett, 1st Armd Div. Neither the med tk nor the ½ track constitute a satisfactory command vehicle for bn and higher [illegible]. A suitable pyrotechnic device with necessary ammunition should be placed in all command vehicles from section to the regiment. The present allocation of motorcycles is not sufficient to provide messenger service and traffic control during movement.

USA-265, Nov-1945, Maj Gen Harmon, 1st Armd Div. New T/O for Tk Bn is sound. May need more maintenance.

USA-265, Nov-1945, 1st Lt Mills. 13th Armd Regt. Each Bn should be authorized a radio maintenance man and a set of tools. He should have a 3/4 ton truck for his use.

USA-265, Nov-1945, Lt Col Cairnes, 13th Armd Regt. Need four motorcycles in every bn for messengers.

USA-265, Nov-1945, Col Hightower, 1st Armd Div. I would like the replacement of the M-8 assault gun with the M37's in the battalion.

USA-265, Nov-1945, Lt Col Carr, 1st Armd Div. The present organization provides insufficient maintenance vehicles in the battalion.

APPENDIX "B"

TK BN Contd

USA-265, Nov-1943, Lt Col Cairnes, 1st Armd Div. Tk crews should be armed with pistols and shoulder holsters. There should be one carbine and one tommygun in each tank.

USA-266, Nov-1943, Lt Col Cole, 1st Armd Div. I recommend that there be wire down to companies. We have this, having gotten our equipment from Heinie. All tanks should have two way radios.

USA-267, Nov-1943, Col Hightower, 1st Armd Div. All tanks should have two way radios.

USA-295, Dec-1943, Major Grandona, 13th Armd Regt. Urgently recommended for field recovery is a tracked vehicle. The present wrecker is greatly handicapped in sand and deep mud. Transporters for tanks are urgently needed and requested for long marches.

USA-329, Feb-1944, Surgeon's Office, Hq 1st Armd Div. Shoulder holsters should be issued for tank personnel.

USA-345, Dec-1943. Brig Gen Robinett. 1st Armd Div. The necessity for the inclusion of AT and AA weapons in battalion and lower echelons of commands has been demonstrated. The tendency to provide battalions with excessive overhead service and maintenance should be resisted.

USA-355, Jan-1944, Lt Col Hammack, 751st Tk Bn. We have needed a repair vehicle with spare parts for the radios of the battalion.

USA-358, Jan-1944, Lt Col Lisle, 2d Tk Gp. The Gp need at least a total of (3) Liaison officers instead of one authorized. These officers should have a 1/4 ton truck equipped with radio.

USA-382, Jan-1944, Lt Col Felber, 755d Tk Bn. Based on combat experience the T/O and T/E are not adequate as to both maintenance and transportation.

USA-383, Jan-1944, Lt Col King, 751st Tk Bn. We need both the half-track and the T-2 recovery vehicle in the companies. We also need (1) 3/4 ton truck in each gun company and (2) in Hq Co. We need an additional kitchen truck and personnel (6) men to run it.

USA-388, May-1943. Lt Col Hammack, 751st Tk Bn. A pair of 6-8 field glasses is essential for each tank commander.

USA-389, May-1943, Maj Gen Harmon, 1st Armd Div. It is strongly recommended that the battalion combat trains be organized to include water, rations, fuel and ammunition.

APPENDIX "B"

TK BN Contd

USA-348, Dec-1942, Col Benson, 1st Armd Div. Tank Battalions should be organized for supply, maintenance and reconnaissance.

USA-142R, Sep-1943, Lt Col Millyard, 67th Armd Regt. If the present organization is continued, a Bn Maint Sect of about 30 men should be authorized and furnished with appropriate ratings, Shop equipment etc. The present bn is exceptionally weak in rem. To operate independently or on a separate mission it is necessary to have attach rem and inf. We have urgent need for a sight comparable with the German Mark VI Tank sight.

USA-142R, Sep-1943, Lt Col Quillian, 66th Armd Regt. I do not like the mixed light and medium tank idea for a Bn, mainly on account of the guns. I like big guns. Eliminate the half-tracks of the platoon commanders of the assault gun and the mortar platoons and replace with peeps. The peeps must have radios.

USA-419, Apr-1944, Lt Col Ewing, 1st Tk Gp. 15% (6) overstrength in officers is required.

USA-419, Apr-1944, Lt Col Folber, 755d Tk Bn. One additional Warrant Officer is needed for communications.

USA-419, Apr-1944, Lt Col Davis, 760th Tk Bn. Need four more men for each T-2 recovery vehicle to do a job under combat conditions in maintenance and recovery. Need 1 additional 2½ ton truck for spare parts, fuel and lubricants. Need 8 SCR 510 radios. Also 29 SCR 300 radios per bn are needed for communications with supported inf units.

USA-419, Apr-1944, Lt Col Hammack, 751st Tk Bn. Add an auxiliary generator for installation on a M4A1 personnel carrier for Bn Hq. Use vehicle now mounting SCR 193 and SCR 506 radios.

USA-461, Feb-1944, Maj Gen Wood, 4th Armd Div. Recommend additional equipment under T/O 17, 15 Sep 43, three 1 ton 2 wheel trailers (Cargo).

USA-600e, 2 March 44, Lt Col Folber, 755d Tk Bn. Need 3 more officers on Bn Staff for liaison purposes. Need a WO communication as Asst Comm Officer. Need a Sgt mail clerk, and a 3/4 ton carryall and driver for mail use.

USA-600e, Feb-1944, Lt Col David, 760th Tk Bn. Need a T-2 Recovery vehicle in place of a light tank authorized by T/O&E 17-17, 28 Oct 43. Replace 2-2½ ton truck with 2-3/4 ton weapons carriers for use in forward areas for supply.

USA-600e, March-44, Lt Col Folber, 755d Tk Bn. Need 2-3/4 ton weapons carriers for supply use in forward areas in addition to all present vehicles. Need 3 additional SCR 510 sets for liaison use.

APPENDIX "B"

TK BN Contd

USA-678, Jul-1944, Lt Col Rupfer, 746th Tk Bn. Should substitute M8 Armored Car for the ½-track now authorized the battalion commander.

USA-718, Jul-1944, CG 8th Army. Should have the 3/4 ton truck to be used only by the Bn Mail clerk to transport mail. 1/4 ton is not large enough for this purpose. Bn Hqrs should have a one cargo trailer to transport extra maps, tents, tables, drafting equipment and field manuals. Transportation now allotted the bn maint is not sufficient to transport the spare parts and maintenance equipment. Need two 2½ ton truck for this purpose. Tank crews should be issued sleeping bags. Present T/O&E does not provide for a tent for the message center. All officers and Tank commanders should have a 45 cal pistol instead of a tommy gun or carbine.

USA-845, Oct-1944, Hq 12th Army Group Observer. Bn Commanders need a jeep with radio which will permit communication with their own unit and with supported infantry without limiting freedom of action. SCR 510 will not with SCR 506, but has insufficient range. If Tk commander remains in tank, SCR 508 does not give communication with infantry. Need a more powerful set in the jeep which will net with both inf and tks, the new AN/GRC8 would be desirable, if there was installed in 1 jeep, several tanks and 8 in Bn Hq.

USA-846, Oct-1944, Lt Col Rau, 7th Armd Gp. Should be an asst S-2, A captain who could be attached to Div G-2 sect, to act as representative of the Bn Comdr and liaison officer.

USA-847, Oct-1944, Major Kirchner, Hq AGF. The rcn platoon and mortar platoon should have the SCR-508.

USA-995, Nov-1944, Lt Col Lagrow, 15th Tk Bn. Would like a tk dozer on the basis of one per co. It should be on the maint officers tank in Co Hq. Should have a trailer to carry the blade on long marches. Should have eight field telephones instead of five in Bn Hq when used as artillery.
USA-1017, Nov-1944, Col Bellidge, MTO Observer. SCR 528 is wanted instead of the 538 in both light and medium companies. The SCR 528 is preferred to the SCR 510 for liaison 1/4 ton truck because of the greater range and flexibility and mechanical dependability. A minimum of one dozer per company is desirable.

USA-1017, Oct-1944, Hq 12th Army Group. Mortar platoons are very rarely used and could well be eliminated from the T/O of separate Tk Bns. The Bn Rcn Platoon is essential for road and area rcn and occasional additional liaison, its radio should be SCR-528 for the SCR 510 in the half-track, other communication should be 508 of 510's mounted in 1/4 ton trucks (desired but not essential). The assault howitzers should be increased to six. Should have a half-track built for the CP. Rcn platoon should have a reconnaissance vehicle.

APPENDIX "B"

TK BN Contd

USA-1017 Oct-1944, Hq 11th Armored Group, Col Higgins Group Commander recommends the organization of a composite Ordnance Company for attachment to each separate Tank Battalion. It should comprise a tank repair section, automotive section, depot section and artillery and small arms section.

RECOMMENDATIONS FOR CHANGES IN THE ORGANIZATION OF THE MORTAR PLATOON

1. Lt Col Moran, CO. 1st Bn, 41st Infantry, Sep 1943. USA-148.

A corporal should be authorized as second in command of mortar squads.

2. Lt Col Walbern, CO, 70th Tank Battalion, July 1944. USA-678.

Mortar and assault gun platoons should be combined.

3. Capt Mann, CO, Heavy Weapons Co, 30th Div. Sep 1944. USA-844.

The weak point of an 81mm mortar platoon is poor communications due to insufficient personnel. The platoon should have a separate communication section of at least six men. We have had excessive casualties when we tried to attach a mortar section to a rifle company.

4. Colonel Wright, Observer with 12th Army Group, Oct 1944. USA-1017.

Mortar platoons have been used to a limited extent, but successfully when employed.

5. Battalion Commanders of 735th and 712th Tk Bns. Oct 1944. USA-1017.

Both battalion commanders agree that mortar platoons are very rarely used and could well be eliminated from the T/O of the separate tank battalion. Such mortar fire, as is needed, can be obtained from organic divisional units or by fire from tanks or assault guns.

6. Battalion Commanders of the 743d and 747th Tk Bns. Nov 1944, USA-1017.

The mortar platoon of the 743d Tank Battalion has recently been employed successfully in direct support of tank operations. Mortar platoon of the 747th Tank Battalion when employed was employed with the infantry mortars. They feel that there are sufficient mortars available in the infantry for any mortar support required.

7. Observer with 744th Tank Battalion and the 113th Cavalry Group, Nov 1944. USA-1017.

They did not use their mortar platoons as it could not keep up with the tanks. Would like to have a 4.2 mortar mounted on a light tank chassis.

APPENDIX "G"

8. Observer to 11th Armored Group, 735th Tank Battalion, 712th Tank Battalion and 749th Tank Battalion. Aug 1944. USA-1017.

The mortar platoons were used the first day of action to reinforce the infantry mortars. Since that time they have been little used as the infantry had sufficient mortar support to care for all needs.

9. Lt Col Wells, CO. 66th Armored Infantry Battalion, March 1945. USA-1304.

The machine gun platoon of headquarters company is of little value. It should be organized with the mortar platoon into one mortar platoon of six mortars. This could be done without reducing the small arms efficiency as there are ample machine guns in the rifle company.

10. Major Carvin, CO, 48th Tank Battalion, 14th Armd Div, March 1945. USA-1304.

The 81mm mortar had been found of value by this battalion. Would recommend that a 4.2 mortar on a tank type chassis would be more desirable.

11. Lt Col Watson, CO, 25th Tank Battalion, March 1945. USA-1304.

The battalion found little use for its 81mm mortars and could well do without them.

12. Major Edwards, CO 23d Tank Battalion, 12th Armored Division. March 1945. USA-1304.

The M21 carrier, 81mm mortar half-track had proven very valuable and had had extensive use in smoke operations.

13. Major Hall, CO, 43d Tank Battalion, March 1945. USA-1304.

This battalion has made only limited use of the 81mm mortars.

ORGANIZATION OF
ARMORED DIVISIONS

Colonel, George M. Dunn, Observer, ETO, April 1945. USA-1379.

1. Armored Divisions

Universally armored divisions reported a lack of adequate infantry strength and commonly the following organization for the armored division was recommended:

Three (3) combat commands each consisting of two (2) infantry battalions and one (1) tank battalion.
Three (3) 105mm howitzer (SP) field artillery battalions.
One (1) 155mm howitzer (SP) field artillery battalion.
(above organizations be equipped on a six (6) howitzer per battery basis).
One (1) cavalry reconnaissance squadron.
One (1) engineer battalion (less bridge company).
One (1) quartermaster battalion (including two truck companies).
One (1) ordnance battalion.
One (1) medical battalion (augmented to care for additional infantry evacuation).
One (1) signal company.

Division to be commanded by a major general, with brigadier generals as assistant division and artillery commanders. Combat commands to be commanded by colonels.

The only unit visited which preferred the old or "special" type division was the 3d Armored Division. This unit recommended the retention of the regimental organization but desired another infantry regiment. As indicated in paragraph 6, above, most units believed the light tank should be retained in the cavalry reconnaissance squadron and the light tank companies of the armored division. Serious consideration should be given to the composite type organization recommended by the 5th and 6th Armored Divisions which would provide for nine (9) composite infantry-tank battalions, each consisting of:

Battalion headquarters and headquarters company.
Two (2) infantry companies.
One (1) tank company (medium or heavy).
One (1) weapons company.
One (1) service company.

In the case of the 5th Armored Division it was suggested that this composite organization might be carried down into each company which might be organized into two (2) infantry platoons and one (1) tank platoon. All echelons of command from army groups down to divisions stressed the fact that tank destroyer and antiaircraft artillery battalions should be organic in the armored division. It was felt

that the need for a tank destroyer battalion will no longer exist when our tanks are equipped with cannon having penetrative power adequate to destroy all enemy armor.

2. Medium Tank Battalions. (Separate)

Basicly the organization of these units appears to be sound, however, the light tank appears to have little place in a unit engaged in supporting the infantry division. With respect to the amount of armor necessary to support an infantry division, two plans have been recommended with the proponents of the two types of organization about equally divided in numbers:

a. Plan 1:

Battalion headquarters and headquarters company (Includes one platoon of 105mm howitzer tanks with a platoon leader and two forward observers) Four (4) heavy tank companies of three (3) platoons of five tanks.
Service company.

b. Plan 2:

Group or regimental headquarters and headquarters company.
Two (2) tank battalions. Each consisting of a headquarters and headquarters company (includes one platoon of 105mm howitzer tank with a platoon leader and two forward observers).
Three (3) medium or heavy tank companies.
Service company.

Both of the above plans contemplate the augmentation of the division light ordnance company to permit that unit to provide adequate supporting ordnance facilities.

Detailed recommendations from commanders in the theater concerning necessary changes in tables of organization and equipment have been made available to the interested staff section of Headquarters, Army Ground Forces. The theater is now preparing recommendations concerning changes in the table of organization and equipment for armored units. It was repeatedly recommended that the present deficiencies in organization be corrected prior to the replacement of armored units to another theater. Lieutenant General Devers gave particular emphasis to this in his discussion with the undersigned.

CONFIDENTIAL

USA-343

Interview with Colonel Robert T. Marasit, Artillery Officer of the First Armored Division at First Armored Division CP, December 29, 1942.

Specific Training could be carried on in Theatre of Operations - "None. Troops should be fully trained when they arrive in the theatre. Range facilities do not exist. Road congestion is terrible. The manner in which equipment is shipped. Usually shipped so as to arrive with communication and no guns or guns and no communication. The crowded condition of the area permits little training. Units should be completely trained when they arrive."

Current Doctrines on Armored FA - "The current doctrines as taught by the Armored Force FA and FA School need not be supplemented and instruction now given will meet anything that we have met so far. Artillery is normally staggered. Control of fire in the present system is by telephone or radio and control of 6 gun batteries under this system is possible. The British use the loudspeaker system but this gives away your position, as it can be heard for miles."

Is fire of gun or howitzer largely used in direct fire? - "We have destroyed 10 medium tanks by direct fire and are dependent upon weather conditions; dust more than smoke."

Local security - "A battery of armored FA makes use of clerks, cooks and other such personnel to handle its own local security."

"Armored FA operating by itself needs larger caliber guns. Would prefer to have 1 battalion of 155mm guns in an armored division. Need more artillery. Germans pull back at night about 2000 yards from contact. With air observers and long range guns we could do much damage at this time."

GOS deficiencies - "The First Armored Division has had only about 6 or 8 replacements since it left the United States in May, 1942. These replacements are good average second lieutenants."

Aerial photographs - "Up to now we have had none. They are vital."

Proportion time shell - "Present proportion of 10% smoke is believed sufficient. As to proportion of time, present experience does not permit a statement."

Transport - "Armored FA use half-tracks."

Pack Artillery - "Some could be used in this mountainous country. Would be very useful to permit foot troops to gain access to terrain. They normally would not be available."

System of maintenance - "Yes. I believe that tank recovery vehicles should be made available to maintenance companies."

CONFIDENTIAL

ISR 343

Means and method of AA protection - "Anti-aircraft defense in an armored division is sadly deficient. Have devised special mounts for dual and single .50 cal. machine guns, both vehicular and ground."

Communication equipment - "T/O equipment would be satisfactory but are not available to artillery battalion in this division. The 510, 293, and 193 were improved very effectively. No special weather or climatic conditions were experienced."

Visual communication practical? - "It has been stressed in this division. It is practical."

Use of Pyro-technics - "We are using them but it needs to be developed. Germans use them plenty. Used to control and lift fire."

"Present system of fire control in this division is very effective. However in some instances in some instruments, higher magnification is needed."

Air-ground - "We have had no air observation or air support."

Persons to be eliminated from T/O - "More experience is needed. Do not care to comment."

Methods of effecting AT defense - "Guns are sufficient in number but not in might. The 37mm should be replaced by either 75mm or 3 inch guns with the artillery battalion."

USA 313

These are remarks and opinions of Colonel Clarence C. Benson, Chief of Staff, 1st Armd Div and do not necessarily reflect the views of the Div Comdr.

LOCATION; 24 miles SE of Oran; Time: December 28, 1942. - 9100 men in bivouac - remainder of Division with C Comd "B" (6400 men) 600 miles to East on the Tunisian Front serving with the British First Army.

Method of Supply - C Comd "B" is serving as a supply agency not only for itself but for all American troops operating with the British First Army. They handle supplies of all classes, principally food, ammunition, gas, and oil. These supplies are sent from Oran by rail or water to Soukahras where they are broken down by C Comd "B" and issued to units. This imposes an unusual and difficult supply duty on C Comd "B" which is not organized to handle it. What is needed is an Ordnance Troop for handling ammunition, Ordnance light and heavy maintenance companies for 3d and 4th echelon maintenance, quartermaster companies to handle food and gasoline; medical, engineer, and si nal units for their respective supplies and a coordinated head such as would exist under the army setup.

Method of vehicle maintenance - Vehicle maintenance is primarily carried on by organization maintenance sections, backed up by battalion maintenance sections and regimental maintenance companies. In addition, C Comd "B" has 1 company of our Maint Bn, the 30th Ordnance Co, Heavy Maintenance Tank, has recently been dispatched to support of C Comd "B". Practically all spare parts received from England have been sent up to C Comd "B". The Maint Bn, 1st Armd Div, had to use its personnal and spare parts to complete tanks which were being sent to the front as replacements. These were 12 M-4 Medium and 13 M-3 Light tanks.

The British supply agency of the British First Army has done everything possible to meet the needs of American units serving with the British First Army, even to the extent of putting American soldiers in British uniform, especially tank crews who have escaped destruction, and have usually managed to re-equip them within 24 hours. Americans subsisting on British rations. The unfamiliarity of the British with American ammunition and supply items has been a handicap.

Method of Evacuation - 1 Co, 47th Med Bn, 1st Armd Div, has been supporting C Comd "B" and its organization and equipment are reported to be excellent and very satisfactory except that the battalion had chests issued to regimental and battalion medical detachments which were too bulky and must be broken down to more practicable packages, for use with fighting troops. It is reported that battalion medical detachments are not strong enough. 1st aid vehicular kits are excellent in themselves, but prove to some extent ineffective because they are not removed from burning tanks and do no good. In some organizations the men have been instructed to put morphine syrrets in their first aid packets and to put other small items from vehicle kits in pockets in their clothing. Sulphanilamide tablets are being used with excellent results. Have it both in tablets and powder.

AGO 343

Vehicular evacuation - German evacuation is superior. It has been reported that they have carried it to the point on the battlefield where they have been seen to remove 2 burning tanks by recovery vehicles from the battlefield while they were still burning and during this operation we shot off the tracks of the recovery vehicle which they repaired under fire and went on their way. They later removed 6 other tanks which had been knocked out of action. We have no comparable equipment as yet in our organization.

Tank Destroyer Support - The 1st Armd Div has the 701st TD Bn attached to it. This battalion was organized from the 1st ArmdDiv personnel on Dec 15, 1941, and has been with the division constantly to date. Cos B and C accompanied C Comd "B" in operations at Oran and subsequently on the Tunisian Front. Their operations have been exceedingly successful. All tank personnel have the highest praise for them and desire more of them. It is the Division Commander's opinion that a TD Bn should be a part of the division. It has been a constant struggle to keep this battalion with the division. Co B is reported to have put up a record in which 1 gun knocked out 5 German tanks and each of the other guns got 1 German Tank. Type of gun - SP 75mm guns on half-tracks. 601st TD Bn has recently moved to the Tunisian Front and is operating with C Comd "B".

Anti-aircraft Support - Attached to C Comd "B" for the Oran operation was the 106th Coast Artillery Bn, Anti-aircraft equipped with 40mm guns. This battalion has continued to operate with C Comd "B" on the Tunisian Front. Results of its operations are not known. It is reported that the dual .50 Cal. machine guns is exceedingly effective as anti-aircraft protection for ground troops.

Theatre Training Methods - See Reference TM #196.
We have ranges suitable for all small arms firing. We have been concentrating on combat firing. The artillery range is suitable for any guns up to the 105mm right on our door-step. Anti-aircraft range not yet satisfactorily arranged for.

Method of Replacement - Constant chiseling by G-1, C/S, Commanding General and all members of the staff to find or locate any replacements around. We received 950 of the finest replacements just before we left North Ireland. Came from the U. S., and were selected from at least 4 Armd Regts. Many were volunteers from the 9th Armd Div and had 6 to 8 months training and were graduates of numerous courses at the Armored Force schools. These came to us without any premonition that they were coming. We needed just that many at that time to operate due to losses from yellow jaundice and the like. Replacements in Africa come by requisition on Hq II Corps or NBS and from casuals formerly from the 1st Armd Div coming out of the hospital.

We have not yet received our full quota of vehicles from the United Kingdom that were shipped with us. Replacements for losses of C Comd "B" have been limited to 12 medium M-4 and 17 light M-3 tanks obtained thru the Ordnance Officer, II Corps. Principal difficulty about replacing tanks is the incompleteness or entire lack of radio equipment. We never received a tank that was ready to fight. Tanks were shipped by mail

There are approximately 100 40-ton freight cars available in North Africa. About 20 are in use in Algiers and 80 still to be rounded up in Morocco. Col Bruce' Bn went from Oran to Algiers under their own power and from Algiers to Bone by British tank landing craft, then to Souk-el-Arabs by marching. A total distance of 700 miles and it took a lot out of them mechanically by moving them under their own power. 300 hours average on his engines and no rubber on his tracks when he came out on December 10. This battalion was with the first landing. It is the 2d Battalion, 13th Armd Regt, under command of Lt. Col. Bruce. This battalion knocked down 6 German planes, approximately 40 more German planes destroyed on the ground at a landing field at Djerdeida; knocked out 14 German 88mm guns and 64 German Mark III and IV tanks during 3 weeks in action on the Tunisian Front. His own losses were 2 officers, 26 men killed and 6 or 8 missing; 48 wounded and 26 tanks knocked out. He was using M-3 medium tanks.

Tactics in Armd Div Employment - In general, C Comd "B" of the 1st Armd Div, under command of General Oliver, avoids piecemeal employment. Started up from Oran to Tunisia on November 12. C Comd "B" consists of the 13 Armd Regt (-1 Medium Bn), 1st Bn, 1st Armd Regt, which is a light battalion; the 27th FA Bn; the 6th Inf (-Hq, Service, and I Co and those lost in the harbor at Oran); 1 engineer company, 1 maintenance company, 1 medical company, 2 companies of TD Bn and 1 supply company. None of the action reported to date have employed C Comd "B" as a C Comd or even in coordinated teamwork between small components of the C Comd. Units and organizations were assigned tasks by Hq of the First British Army.

How is Infantry used? - So far it has been used as any regular infantry would be used with special consideration to employment as armored infantry in conjunction with tank attacks.

How is artillery employed? - 27th FA Bn has been employed very effectively as direct fire, as TD guns, against German tanks as well as in its normal role as indirect fire with observers well forward. It has proved to be highly effective in training for both missions indicated.

TD weapons employed - Employed in indicated association with tanks and was so employed in operations at Oran and later on the Tunisian Front, also in close association with infantry, having proven remarkably effective with all troops with which they have been associated. Have given them considerable praise for their share in the battles and it is the common opinion that the troops want more TD Bns with them all the time. 75mm guns mounted on half tracks are the TD weapons. The SP 37mm have not yet been replaced by heavier guns as contemplated in the new T/O.

Employment of Tanks in Assault - Our medium tanks have been used in direct assault against German Mark III and IV tanks. Light tanks have been used to hit and run and hit and run again with good results against the sides and rear of the German Mark III and Mark IV tanks and the 37mm gun is not effective against the front armor of a German Mark IV. Brass employed his short-barreled 75's for indirect fire to support a maneuver made by other M-3 tanks armed with long-barreled 75's against German tanks.

Identification - Our vehicles have been attacked by our own planes and our planes have been shot down by our own vehicles. It is extremely difficult under favorable conditions and frequently impossible to identify planes. Our supply company commander has ordered all his men to shoot anything flying overhead the size of a goose.

Tank AT Guns - There has been no report of our AT guns firing on our own tanks. German tanks are painted a solid desert color and are distinctive from our own being much lower, etc.

Air Ground Support - Practically non-existent. Germans have had almost complete control of the air on the Tunisian Front in the area occupied by ground troops. Germans had all the air support. We had none.

AT Weapons - Germans use their 88mm guns with laber troops who direct it and within 15 minutes after they went into position were ready to go. They used 99mm and 47mm AT guns in considerable quantities. We employed 75mm guns and 105mm How effectively.

Method of Rallying after attack - Tanks withdrew usually from contact and the Germans would likewise withdraw and go back several miles to whatever cover was available, such as olive groves, folds in the ground, etc., the cover was generally lacking. Germans like to break off action about 5:00 p.m., and build individual fires and cook hot meals and did so even under long range fire.

Method of Securing Trains - Col. Brass was extremely successful in getting his supplies and saving his trains by moving them only at night and keeping them 15 to 20 miles back from where he was engaged, well dispersed, during hours of daylight and got them up to refuel and feed between 11 and 2. The British lost many supply vehicles by keeping them within 2 or 3 miles of the battle even in daylight and they were repeatedly bombed.

Methods of Security - Each battalion or attached unit provided its own local security usually dismounted men with Tommy guns or rifles, complete blackout. Our guards ordinarily permitted anyone to pass before challenging, getting them from the rear.

Training - The training which American Troops have been given has been correct. We perhaps have to put more emphasis on 1 thing or the other but nothing is fundamentally wrong as put out by the AF School or manuals.

Separate Tank Bns - We have employed as separate battalions without the benefit of having the separate battalion organization for supply, maintenance, or reconnaissance. In my opinion, battalions will frequently be so employed and should be organized with that in view.

Tanks and Armored Cars and Type used - M-3 Medium Tanks and M-3 Light Tanks.

Artillery and type used - SP 105mm How mounted on half-tracks; SP 75mm guns mounted on half-tracks for TD companies; SP 75mm How infantry and tank battalions on half-tracks and SP 37mm Guns on 3/4 wheeled chassis.

Troop carrier - M-3 Half-track.

Wheeled Transport - 2½ ton standard cargo truck.

Technique of fire - Tanks: The gyro-stabilizer was used successfully to fire while moving. Indirect fire was successfully used b tanks. The American tank crews are almost unanimously reported to be better than German tank crews and gunners.

Training to Secure Superior Gunners - Considerable emphasis was placed on bore-sighting; critique on each shot fired in training on the spot, at the time; dry run firing by gun crews other than the one using service ammunition while on the range; emphasis on cleanliness of breech block, firing pin and on working parts; thorough explanation and understanding of sights, fuse setting, and principally, a keen personal interest in the part of the Division Commander who was formerly director of the department of gunnery at Fort Sill. Use forward observer and fire on burst with radio communication. We have a tank, half-track and peep for every observer. Develop all personnel of radio-equipped cars to act as artillery observers.

Technique of Fire and Penetrative Characteristics - 75mm TD Gun has been observed to penetrate German Mark IV tanks at 1500 yards, apparently passing completely through the tank. 37mm gun has been effective against sides and rear of Mark IV up to 1000 yards but not against the front armor. Whenever 105 shels have struck a German tank, the tank has been disabled. The 75mm How has not had the advantage of the thermite AT ammunition but is an exceedingly useful weapon and when used with that type ammunition should be a very useful AT gun.

OCA 3443

Clothing - In general all men wear combat jacket and trousers and are glad to have them.

Means used to acclimate vehicles to extreme heat or cold - There is no extreme heat or cold as yet.

Doctrine of AF for our troops - Our doctrine is all right, our manuals are excellent, our troops cannot conform to those teachings when employed on missions which they have been taught to avoid. For example, the 1st Armd Div going by the British AF doctrine is to engage the hostile armor wherever found and destroy him with tanks. Tank versus tank is Item X in the German list of tank objectives and is adhered to only when it cannot be avoided. Ours is similar to the Germans.

Training of Armored Units - We left the states on 30 April and am not in position to say what they have been doing since.

Combat employment of our troops to date indicates failure on the part of small units both tank and infantry, to take advantage of cover and to actually improve on the battlefield fire and maneuver in each action. These matters have been drilled into our troops repeatedly for 2 years but apparently it takes enemy bullets to make this lesson stick.

Time for Acclimation of Troops in Theatre - Climate is splendid with considerable improvements on the factory district of England. No acclimation period is required.

Review of Training - We work on these matters at every opportunity and try to keep all units ready to fight as they have been for some months past.

Is Training Actually conducted during rest periods? - Yes.

Do our armored units receive combined training? - Combined training is the rule in this division.

Method of training higher staffs to include division, corps, and army - For division, frequent actual maneuvers at full strength with their organizations. CPX's covering distances up to 100 miles, commanders, staff and communication personnel in vehicles. Frequent use of map problems and terrain problems. No comment for Corps and Army.

Any recommendations for improvement of training in U.S. - More emphasis on combat firing of all types and less on known distance firing. Actual use of cover in conjunction with combat firing, as many reinforced tank battalion problems as practicable, each tank battalion be reinforced with at least 1 battery of 105's, 1 company of infantry, and preferably with TD and engineers in the picture.

US 0 34

Any deficiency in organization of armored units - I am emphatically of the opinion that the present armored division is entirely too large and unwieldy. It cannot be transported by road or rail or both without undo delay for accumulation of necessary data and equipment. It cannot be shipped overseas in 1 piece. It cannot be employed tactically as a unit without the addition of ordnance, maintenance, ammunition companies, and quartermaster companies to supply fuel and carry ammunition and it should have considerable backing for medical, engineer, and signal services.

The use of the C Comd in conjunction with the Hq of a regiment whereby the regimental commanders become executive for the combat command commander is extremely awkward. Regimental commanders feel that having trained the men to fight and thus being responsible for their conduct in action, they should be in command of them in action. It has been our experience that frequently it is desirable for the Div Comdr to give orders directly to a reinforced battalion of tanks and that going through the normal channels, C Comd and regiment, delay the transmission of orders unnecessarily. It would appear desirable to eliminate either the regimental echelon or the combat command echelon to secure increased speed and execution of orders.

The Division is decidedly lacking in not having as an organic part of the Division at least 1 TD Bn and 1 Anti-aircraft Bn in proportion of infantry to tanks is less than we would like to have it.

Organization of supply of the C Comd - In this division it is SOP for a commander to be given responsibility for the supply of units operating under his command whether they are organic or attached. To make this work in a C Comd which lacks an S-4 it is necessary to use the regimental S-4 and this will work though not smoothly. The supply of the division has, when it operates more than 90 miles from the railhead or truck head, been dependent on support by quartermaster companies from Corps or Army.

Do armored divisions employ a fixed C Comd - We have no fixed C Comd organization in this division and have employed as many as 5 C Comds simultaneously.

Are C Comds found adequate for the task assigned - We have found it necessary to employ the Hq which has not only adequate means of communication to handle the various elements of a C Comd but also the supply setup to keep them supplied. This means that we have to use a regimental Hq or the Hq of a Rcn Bn or the Hq of a TD Bn for any C Comd organized for anything under the brigadier.

Is organization for recovery for maintenance adequate? - Recovery of disabled vehicles is practically nonexistent. Recovery vehicles issued to and used by battalion, regimental, and divisions maintenance companies would improve and might solve the problem. Such a vehicle must be provided with a winch and should be capable of transporting a disabled tank.

Is organisation for supply adequate? - Division must be supplemented by additional transportation to carry its ammunition and to supply it with food and fuel whenever it is more than 30 miles from rail or truck heads. Fuel dispenser company is not a part of the Division and is required whenever fuel is furnished in other than 5 gallon containers.

Is organization for air support adequate? - It is necessary to have air support party attached to the Division well in advance of the operation in which air support is to be used. This party used in conjunction with our present air request units should provide adequate communication with such air support as may be available.

Do troops arrive properly equipped for combat? - Each man arriving in North Africa carried at least 50 lbs in excess baggage probably because our employment in this theatre was not foreseen when we left the U. S. 6 months ago. Each man has in addition to his combat suit a woolen blouse, a woolen overcoat, and woolen underwear, 2 bed sacks which he normally has no use for, 2 pairs of goggles, 1 of which was issued about a couple months ago aboard ship as well as an unusually complete personal kit for chemical warfare protection. It will be necessary for us to store much of the contents of the "A" bags now with troops and leave behind when we go into action as we left much excess equipment in the "B" bags in North Ireland.

What recommendation do you have for the improvement of equipment? - Lower silhouette for our tanks not only to improve their tactical efficiency on the field but make them less conspicuous and also to permit them to get through railroad bridges, railroad tunnels and into the holds of ships without being modified each time they have to be used. Our open top vehicles are inadequate for the use of troops such as those subject to air attacks as ours have been on the Tunis Front but I understand that this matter has already been taken care of by vehicles now in production.

Is communication equipment adequate? - Communication equipment is probably the best in the world and when received in full quantity with crystals for each design will be fully adequate.

What is your regard to the SP? - So far as we are concerned we are unanimously in favor of SP artillery.

Describe recovery of equipment? - We have only 10 ton wreckers and no tank transporters. In one instance, 2 ten ton wreckers were unable to pull a medium tank out of the mud on the Tunisian Front.

Describe step taken to acclimate vehicles. - No special measures necessary to acclimate 1st Armd Div vehicles to North Africa theatre.

CONFIDENTIAL

The use of rubber boats with steel treadways [illegible] operations at Oran was responsible for getting large quantities of armor ashore in a minimum of time thus contributing directly to the quick successful completion of that operation. This is the first time that rubber boat bridges have been so used. In the later stages of operations at Oran the rubber boat bridge was used as a raft in an attempt to land vehicles in rather rough water and 16 half-tracks were thus lost.

What suggestions for training for our Engineers? - Our engineers must have practice in removing mines and blasting ways through mine fields. We have had some experience along these lines by artillery.

We found that the Autocar trailer with bridge equipment extremely difficult to get around sharp turns or roads in North Ireland sometimes causing traffic jams for hours. It is desirable to have a truck with power device capable of handling the treadways.

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HEADQUARTERS AND HEADQUARTERS COMPANY
THIRTEENTH ARMORED REGIMENT

December 21, 1942

SUBJECT: Recommendations for improvement in vehicles & organizational equipment.

TO : Commanding General, CC "B".

A board of Officers consisting of Lt Buckingham (Chairman) Lts. Catron, Green, Mills has convened to furnish recommendations for improvement of vehicles and organizational equipment.

I. Vehicles.

a. Lower silhouettes on tanks.
b. Escape hatches on floors of all tanks.
c. Radios for all Recn. and Command vehicles.
d. More ¼ ton trucks (Peeps) for all organizations.
e. More Motorcycles for Command Headquarters.
f. Armored Recn. carsor turrets on Half-Tracks.
g. Dispence with Half-Tracks.
h. Doing away with light tanks except for reconnisance.
i. Haavier maintenance for Hq. and combined organizations.

II. Equipment.

a. Improve flashlights with blackout lens.
b. Two operators for CW radios.
c. Flameless looking device foe all vehicles.
d. Sleeping Bags (improved) for all personnel.
e. Improved indivudal mess equipment (plastic).
f. Utility pocket knife for all personnel (similar to British issue).

Lewis Buckingham
LEWIS BUCKINGHAM
1st Lt 13th Armd Regt
Commanding

350 -117a

1st Ind.

MAJOR MARTIN M. PHILIPSBORN JR., S-2, Combat Command "B", December 20, 1942.
TO: Commanding General, Combat Command "B".

For your consideration and what action you deem necessary or possible.

Martin M. Philipsborn

MARTIN M. PHILIPSBORN JR.,
Major, Combat Command B,
S-2.

Gen Atkins
Gen Col.
Maj. Phil.

December 20, 1942.

SUBJECT: Enemy Information.

TO : Major Martin M. Philipsborn, Jr., S-2, Combat Command "B".

As a result of the experience gained in recent operations, certain improvements in transmitting information are herewith suggested:-

I - OBSERVATION POSTS

The S-2 should have under his control all personnel, vehicles, telescopes, and radio needed to equip two observation posts. Such posts would be placed by the S-2 and would communicate directly with him. Other posts would normally work under the Commanding Officer, Reconnaissance Company, but would be available for special detached missions.

The equipment per O.P. should consist of: 1 Peep; a very powerful telescope of 10-20 power; camouflage material, and a small radio. The radio should be portable and carried in the peep to enable placing it behind the enemy's lines under cover of darkness, if necessary. The vehicle would then be withdrawn behind our lines, and serve as a relay for the weak signals of the portable radio in the O.P.

II - ARTILLERY FORWARD OBSERVERS

The artillery forward observers should continue to give some indication of major enemy activity observed. This information should be given between fire missions. If necessary an extra man should be placed with the forward observer, to make notes of enemy action.

III - OTHER SOURCES

All personnel should be thoroughly trained to report to the S-2 immediately upon returning from any zone of enemy activity. Negative reports are of the greatest value, and should not be overlooked.

Henry Frankel

HENRY FRANKEL,
Capt., 15th A.R.,
U. S. Army.

reconnaissance missions.

Further changes in the present weapons of the company should include substitution of air-cooled for the water-cooled machine guns, and the issue of a pistol per man. A mount permitting the 50 calibre machine gun to serve as an AA gun is also needed. Regimental Maintenance might be able to improvise such a mount.

It is recommended that the above described equipment be provided with the least possible delay.

Henry Frankel
HENRY FRANKEL,
Capt., 15th A.R.,
U. S. Army.

1st Ind.

MAJOR MARTIN M. PHILLIPSBORN JR., S-2, Combat Command "B", December 20, 1942.
TO: Commanding General, Combat Command "B".

For your consideration and what action you deem necessay or possible.

Martin M. Phillipsborn
MARTIN M. PHILLIPSBORN, JR.,
Major, Combat Command B,
S-2.

December 20, 1942.

SUBJECT: Reconnaissance Company.

TO : Major Martin M. Philipsborn Jr., S-2, Combat Command "B".

Without the Armored Cars specified in the Table of Organization, Reconnaissance Company, 13th A. R., operated throughout the battle of Medjez-el-Bab severely handicapped by its lack of armored vehicles and anti-tank weapons. The enemy counter-reconnaissance screen, composed in part of heavy 8-wheeled armored cars and medium tanks, all armed with either a 50mm or a 75mm cannon, was obviously too strong to be pierced by a force armed for the most part with 30 or 50 calibre weapons.

The heavier weapons which Reconnaissance Company did have were not suited for use against armored enemy vehicles. The assault gun had no armor-piercing ammunition. The 37mm S.P. gun is only effective at less than 500 yds. against PZKW III or IV, and then it must hit the sides or rear of this tank. But the truck mounting of this particular weapon made vehicle and personnel particularly vulnerable at such close range.

Our reconnaissance, therefore, could not push forward aggressively in the face of such overwhelming odds. Its only hope was to avoid the heavy enemy elements and get information by the "snoop and peep" method.

Two sources then lay open: reconnaissance by fire, or reconnaissance by observation. Our equipment did not allow the best possible results for either method. Accurate fire by small arms could not be expected over 1,000 yds., since only the usual aperture sights were available. This meant that a half-track had to go comparatively close to a suspicious area before accurate fire could be brought to bear upon it. The thin armor and relatively slow initial speed added to the inability swiftly to turn about this vehicle made it particularly vulnerable to any light AT or artillery fire.

The company was completely fitted with the 6-power type M8 binocular. This is no match in efficiency and field for the German equipment, or even for our own M-8 glass. Obviously, good observation with these glasses was not possible.

Lack of adequate radio equipment was also a handicap. A Reconnaissance Platoon is designed to operate in two sections, but only one 193 radio per platoon is available. Thus the Scout Section of the platoon finds difficulty in communicating back when operating a long distance away.

Only half of the peeps are equipped with radio, and all of them cannot be used as a means of gathering information.

SUGGESTED CHANGES

The suggestions to follow are strictly limited to those which may be put into effect at once. All long-range planning has been left for discussion elsewhere:-

I - VEHICLES

Four more peeps per platoon, each equipped with a 30 calibre M-1919A4 machine gun, and an SCR 510 radio should be added to the company. Such a vehicle, due to its low silhouette and relatively silent operation has proven ideally suited to reconnaissance by stealth.

Until the arrival of armored cars, a light tank platoon should be made part of the company. This would provide the necessary punch. Such action is in line with the enemy policy. (See Guderian's statement "The light tank is purely a reconnaissance vehicle").

In the past operations, the Reconnaissance Company has been used in direct contact with the enemy without the screen theoretically provided by the Division Reconnaissance Battalion. Since all indications point to a similar employment in the future, it seems logical to provide the light tanks with which the Reconnaissance Battalion itself is equipped.

II - OPTICAL EQUIPMENT

It is axiomatic that Reconnaissance should have the best available optical equipment. Immediate steps should be taken to equip the company with M-3 binoculars, either by direct supply from the U.S. or by exchange with other units in rear installations. (The 591st Engineers, now operating docks in the Oran area, are completely equipped with the latest binoculars).

In addition, spotting telescopes of from 10 to 30 power should be supplied on a minimum bases of one per platoon. Such scopes are now issued to artillery units.

Optical sights for the 30 calibre machine gun would provide a means of reconnaissance by fire. Such sights were available within the regiment and may be obtained again.

A sniper's rifle with optical sight would be very useful in each scout section, for the same purpose.

III - RADIOS

A 510 set should be provided for each vehicle, plus an extra 193 radio per platoon, since each platoon is tactically organized to operate as two sections.

In addition, at least 4 walkie-talkie sets per platoon are needed, to permit communication from two O.P.'s. Such installations placed behind the enemy lines under cover of darkness, could watch enemy activity at critical points and instantly convey the information to the rear.

IV - WEAPONS

Three S.P. 37mm's mounted in half-tracks have already been made available to the company. This is a step in the right direction. Should they become available, one T.D. S.P. 75 per platoon may be desireable, as a base of fire against PZKW III and IV when these tanks are used on counter

RECONNAISSANCE COMPANY

VEHICLES---------- 1 platoon of light tanks
12 additional peeps, each with 1919 A4 - M.G. and SCR 510 Radio.

OPTICAL----------45 Binoculars (instead of 36)
4 spotting scopes, 10-20 power
17 50 calibre M.G. optical sights
4 sniper's Rifles.

RADIO----------12 SCR 510
12 Walkie - Talkies
3 SCR 193

WEAPONS---------- 3 T.D. S.P. 75's (possibly instead of assault guns)
16 M.G. 1919 A4 (exchange for M1917.)

HEADQUARTERS COMBAT COMMAND "B"
First Armored Division
APO 251, S. S. Army

334/AG

December 14, 1942

MEMORANDUM: (To Battalion and Separate Company Commanders)

BOARD

1. You will appoint a Board, consiting of not less than three officers, with the Organization Commander as President, to investigate and submit recommendations for any changes or improvements in organization, tactics or equipment of this Command, based on experiences of the recent operations.

2. Reports will be submitted through channels, to reach this HQ not later than December 21, 1942

By Command of Major General Oliver:

H. E. Lyman,
Capt., Inf.,
Adjutant General

DISTRIBUTION:

C.O. all units
C.O. Battalions
C.O. Separate Companies or Detachments

USA 117a

HEADQUARTERS 1ST BATTALION 6TH ARMD. INF.

December 21st, 1942

PROCEEDINGS OF A BOARD OF OFFICERS FOR RECOMMENDATIONS FOR CHANGES AND IMPROVEMENTS IN ORGANIZATION, TACTICS, AND EQUIPMENT.

1. In compliance with Memorandum, Headquarters "CCB", 1st. Armored Division, December 14th, 1942 a board of Officers met in Tunisia on December 21st, 1942 to investigate and submit recommendations for any changes or improvements in organization, tactics or equipment of Combat Command "B"; based on experiences in operations in Tunisia against the Germans.

2. The following Officers constituted the board and all were present.

Lt. Col., William B. Kern, 0-19566-6th Armd. Inf.
Captain Thomas W. Hoban, 0-326032-6th Armd. Inf.
Captain Walter R. Geyer, 0-313932-6th Armd. Inf.

3. The board found from its investigation that:

a. The 37mm gun is not effective against the MKIII or MKIV German tank. In battle at ranges from 300 to 1200 yards the 37mm gun apparently had no effect upon the above tanks. It was however effective against the German armored cars. After the operations against the Germans the board conducted an experiment with the 37mm gun against a German MKIII tank. This experiment showed the following:

Against the	Range	Result
side(between rollers&bogies)	100 yds.	Complete penetration (1½inches)
same as above	300 yds.	same as above
same as above	500 yds.	projectile buried in armor plate, penetration not quite complete
Front	100 yds.	all rounds richochet ed off angled surfac

Against the	Range	Result
Rear	100 yds.	Penetration 1½ inches into 2 in. armor.
Turret near 47mm Gun	100 yds.	Penetrated 1 in. shield, no damage to main body of turret.

The conclusion to be drawn from the above experiment is that the 37mm gun is only effective against a MKIII German tank at ranges of less than 500 yards if the hit is on the side between the rollers and bogies. The above area is difficult to hit and it is the opinion of the board that a larger calibre AT gun should replace the 37mm now in the rifle platoons. Investigation revealed that our 75mm rifle firing armour piercing projectiles will bore a MKIII or IV German tank from stem to stern.

b. In the operations, because of necessity, 75mm assault howitzers were used as AT guns. In one case a German MKIII tank was silenced at 1900 yards after 5 direct hits (HE). The tank returned the fire after the 3rd direct hit. After the operations an experiment was conducted with a 75AG and a MKIII at a range of 400 yards using HE. No penetration was obtained anywhere. However, bogies and outer surfaces were torn up.

c. There are no reports at hand on the use of the rifle grenade in actual operations. However in experiments conducted against a German MKIII tank the following results were obtained at a range of 25 yards.

Against	Result
Side	Complete penetration (1½ in.) - hole varies from 2 in. diameter on the outside to ½ in on the inside. It seemed to have the spreading effect of shrapnel on the inside.
Front	Where grenade hit angled surface there was no damage. Where it hit a vertical 1 in outer shield it penetrated the 1 in. shield but then lost its force and did no damage to main body of the tank.
Rear	All grenades hit exterior objects (extra tracks, etc.) exploded and did no damage.

d. An experiment was conducted with armor piercing cal. 30 fired at 100 yds. against a German MKIII. It penetrated ½ in. and bounced back.

e. The anti-tank rockets M6 were not available for use in the operations, however, an experiment was conducted against a German MKIII with the following results:

Against	Range	Result
Front	100 yds.	Penetrated 2 in. armor plate, hole 1 in. in diameter.
Turret	100 yds.	Penetrated 1½ in. armor. Where hit was obtained on 1 in. shie around 47mm gun, the shield we penetrated, but no damage done to main body.

f. The damage inflicted by the 81mm mortars was outstanding. The 60mm did good work, but nothing like in proportion to the 81mm. Where a 60 hit in the midst of an advancing platoon column, 2 or 3 men dropped. When an 81 hit 8 to 12 men would drop. It is believed that the armored Inf. rifle platoon mortar squad shuld be armed with both the 81 and 60mm mortars. The 60mm to be a secondary weapon for use only in operations where the 81, due to its weight, could not be used, such as a dismounted attack.

g. It was felt that we have a need for more artillery, particularily for a certain amount of artillery to belong to the Inf. Bn. Commander to be always at his call. The 3-75mm assault guns are fine, but are not believed to be quite enough. An increase in calibre and number of guns is recommended. (See new T/O submitted herewith establishing platoon of 4-105mm howitzers.)

h. The weakest part of our half-track seems to be the track. Many cases of thrown tracks occurred in operations. In some cases the vehicles were lost as a result.

i. A great many improvements are needed on the half-tracks for stowing all the equipment which must be carried.

j. The half-tracks were used as a very effective weapon on a defensive position to counterattack with in order to help restore the position. However, some sort of shield should be provided around the M/G on the pedestal mount in the M-3. As it is now it is a death trap. There were cases where several men were shot down in succession at the same gun---not by the enemy directly to the front, but by the enemy to the flanks.

k. Vehicle blackout lights are too bright for front line use.

l. It is felt that the cal. 50 M/G on vehicles should be principally an anti-aircraft weapon and mounted accordingly.

m. Difficulty was experienced with the 6 power issue field glasses. The enemy could not be properly identified at great enough ranges. Much valuable and timely information was lost as a result of too poor field glasses.

n. There was much opportunity for sniping.

o. A pair of rain trousers would be a great aid in keeping men dry in the field.

p. A few improvements could be made in the present "C" ration for convenience, prevention of waste, and sanitation. For lack of facilities to heat water at the front the coffee is wasted about 90% of the time. If the meat unit opened on top of the can instead of around the side the arrangement would be much more convenient. The can itself could then be used to eat from. If a wooden spoon were provided in the bread unit the individual would not need to carry mess equipment. If mess equipment is used, the washing of this equipment presents quite a problem at the front due to lack of water and heating arrangements, thus presenting a sanitary problem (diarrhia)

q. Some trouble in very wet weather was experienced with our M/G web ammunition belts. Some type of water proof box should be devised in lieu of present wooden box.(It is believed that one is now for issue, but this unit is not equiped with them)

r. During the first operations all radios worked perfectly---the best that we have ever experienced. During latter operations many 510 and 509 sets were rained out. It is believed that more powerful sets should be in each company command car and in the Recn. Platoon leader's car. Each Recn. Platoon 1/4Ton should have a radio. The S-4 should have a radio (one of the more powerful sets), also the Medical Detachment should have a racio in the command net of the Medical Battalion for evacuation purposes.

s. From the operations engaged in it was felt that if only some sort of a loud speaker could be set up on each company command vehicle the control of the entire unit would be surprisingly improved. It is believed that the noise of battle would not greatly interfer with this arrangement. There are lulls in the firing and noise, during which, if only the commander couldncommunicate to every man, the movements and firing could be controlled in a better manner than ever before experienced.

t. It is believed that in the Armored Division the Infantry Battalions should be separate Battalions in the same manner as the Artillery Battalions are. On maneuvers and in these operations we have never functioned as a Regiment. Yet a Battalion is forced to

t. operate separately on seemingly every occasion and the T/O does not set it up, to do so. Whether or not the Battalions are made separate they should be staffed with sufficient maintenance, supply, and personnel sections to operate separately and be self supporting in the event that they are separated from the regiment. In this respect attention is invited to the T/O submitted herewith, which provides for an S-2&3 in addition to the Ex.O., it also provides for an S-4, Maintenance Officer, and Personnel Officer together with sufficient personnel and equipment to operate their sections. In matter of specific items of equipment it is believed that a 10Ton wrecker is an essential item which should be organic with every Armored Infantry Battalion. If this battalion had had one in the last operation it is believed that 1/2 of the vehicles lost could have been saved. The 10Ton wrecker must follow the Battalion column even to staying well up behind the Battalion on the battle field, staying as close as circumstances will permit

u. It is the opinion of the board that the Rcn. Platoon should be equiped with a 37mm mounted in a half-track. The German Rcn. patro now have them out-gunned and out-armored. They are using tanks with their Rcn.

v. There is no need for 3 types of half tracks M-2, M-3 and M-4. The M-3 is the most desireable, chiefly because of space, the door in rear, and the pedestal mount. The mortar could be mounted in an M-3 thus giving more room.

w. It is believed that approximately 50% of the armored vehicles should be equiped with a 50 cal. for anti-aircraft protection.

x. Rcn. Platoon 1/4Ton should be equiped with light machine guns for "reconnaissance by fire".

4. The board recommends that:

a. The T/O for an Armored Inf. Bn. submitted herewith be adopted. The principal changes are: (1) The placing of the 81mm mortars in the rifle platoons. (2) Increasing the calibre of the AT gun from 37 to 75mm. (3) Establishing a 4 gun 105mm Artillery howitzer platoon in lieu of the present cannon (75mm) and M/G platoon (4) Giving the Bn. sufficient overhead to operate separately.

b. The half-track vehicle be a full track vehicle in order to increase its cross country mobility. M-2 and M-4 half-tracks be replaced by M-3's. The mortar mountings be placed in an M-3. The pedestal mount on the M-3 be provided with a shield for the gunner.

b. All half-tracks have baggage racks on the rear for bedding rolls, etc. They also have mine and "C" ration racks constructed on the vehicle outer sides. A horizontal bar be provided along the top on the outer sides of the vehicle for hanging equipment (light packs, etc.). The above racks be provided with brush guar

c. Each vehicle have luminous buttons on the rear to be used near th front lines in lieu of the blackout lights. The luminous buttons be provided with covers.

d. 37mm SP have a armored shield in front of the driver.

e. Approximately 50% of all half-tracks be equiped with 50 cal. M/G on pedestal mounts, the gun to remain on the vehicle at all times principally as an anti-aircraft weapon. All rifle and light M/G squad half-tracks (except platoon leaders half-track) be equiped with 30 cal. water cooled M?Gs. All other half-tracks be equiped with 50 cal. M/Gs. No tripods be furnished for 50 cal. M/Gs since these weapons will remain on vehicle for AA defense.

f. Light M/Gs be mounted on all Rcn. 1/4Ton trucks.

g. All field glasses be at least 12 power

h. Meat unit "C" Ration open on top instead of around the side of car. A wooden spoon be provided in the bread unit. Bread unit be provi ed with a small chemical heating unit for heating water for coffee. C ration cans be box shaped instead of cylindrical.

i. All cal. 30 be AP for use against thin skin armored vehicles.

j. One telescopic sight Be issued per rifle squad for sniper action.

k. Every man be issued a pair of rain trousers.

l. A loud speaker be provided on each Bn. and Co. Command half-track.

m. Upon arrival in a position a slit trench be dug by each individual for immediate protection, then a fox hole 2' wide X 3' long X 4' deep be dug for greater protection.

n. Bn. Hq. have 1 additional half-track with SCR 193 and SCR 293. Each Co. Command half-track have SCR 193 and 1 SCR 510 in lieu of SCR 293. Rcn. Platoon half-track have 1 SCR 193 in lieu of SCR 510
Each Rcn. 1/4Ton have 1, SCR 510
S-4 1/4Ton have 1 SCR 193
Med. Det. 1/4Ton have 1 SCR 193

W. B. KERN,
Lt. Col., 6th Armd. Inf.

T. W. Hoban
Captain, 6th Armd. Inf.

W. R. Geyer
Captain, 6th Armd. Inf.

Armd. Inf. Bn.

17-189 Hq.&Hq. Co.		5-179 Rifle Co.		5-179 Rifle Co.		5-179 Rifle Co.	
11-80 Bn.Hq.	2-34 Co.Hq. (No Change)	1-25 Rcn.Plat (add.)*	3-50 Howitzer Platoon	2-29 Co. Hq. (No Change)	1-50 Rifle Plat.	1-50 Rifle Plat.	1-50 Rifle Plat.

* 1 Sgt. Rcn. (744)(r)
3 Tech.,pfc.pvt.incl.
(1)driver, H-T (735)(s)
(2)gunners,antitank (610)(r)
1 car, H-T, M-3 w/37mm
1 gun, submachine
3 rifles

5-15

Cmd. Sect.

1 Lt.Col.	(p)	
1 Maj.(Ex.O.)	(p)	
1 Capt.(S-2&3)	(c)	
2 Lts.Lia.&Comm. Lia.&Sp.Serv.	(c)	
2 Tech.Sgts.		
(1)Comm.	(542)(c)	
(1)Operation	(814)(c)	
11 Tech.,pfc.pvt.incl.		
(1)Agent.msgr.	(716)(c)	5th
(1)Agent.msgr.	(716)(c)	
(4)Chauffaers	(345)(s)	
(2)driver,H-T	(735)(s)	5th
(2)gunners,machine	(605)(p)	
(1)radio,operator	(766)(c)	4th
(2)radio operator	(766)(c)	5th
2 car, H-T,M-3,W/arm.		
2 Motorcycles, solo		
4 Trucks 1/4Ton		
10 carbines		
6 guns, submachine		
4 pistols		
4 SCR - 193		
2 SCR - 293		
1 SCR - 510		

1-10

Maint. Sect.

1 Lt.	(c)	
1 Mr.Sgt.Maint.	(337)(s)	
1 St.Sgt.foreman Mech.	(337)(c)	
1 Sgt.wrecker chief	(337)(c)	
7 Tech.,pvt.pfc.incl.		
(1)chauffeur	(245)(c)	5th
(1)Driver, H-T	(735)(s)	5th
(2)Mechanic	(014)(c)	4th
(2)Mechanic	(014)(c)	5th
(1)Welder	(256)(c)	4th
1 car, H-T,M-3,W/arm.,W/winch		
1 Trailer,1-Ton		
1 Truck, 10-Ton wrecker		
1 Truck 1/4-Ton		
9 carbines		
2 guns, submachine		

1-32

Supply Sect.

1 Lt.	(c)	
1 Mr.Sgt.	(821)(c)	
4 St.Sgt.		
(1)Gas	(821)(c)	
(1)Ration	(821)(c)	
(1)Water	(821)(c)	
(1)Amm.	(821)(c)	
27 Tech.pvt.pfc.incl.		
(10)chauffedrs	(345)(c)	
(16)Basics	(521)(r)	
(1) radio oper.	(766)(c)	5th
8 Trucks,2½-Ton		
2 Trucks, 1/4-Ton		
17 Carbines		
16 Rifles		
1 SCR - 193		

1-2

Pers. Sect.

1 Lt.	(c)	
1 T/Sgt. Sgt.Maj pers	(816)(c)	
1 Tech.pvt.pfc.incl.		
(1) Chauf.	(345)(c)	
1 Truck-2½Ton		
3 carbines		

2-20

Med. Det.

Add.		
1 Tech.pvt. pfc.incl.		
(1)radio oper.	(766)	5th
2 trailers-1-ton		
1 SCR - 193		

1-1

Chaplain

1 Captain		
1 Tech.pvt. pfc.incl.		
(1)chaplain Asst.	(534)(s)	5th
1 Truck-1/2Ton Panel		
1 gun,submachine		

Howitzer Platoon

1-7 Fire control sect.

1 Lt.		(c)
1 St.Sgt.,plt.Sgt.	(651)	(c)
6 Tech.,pfc.pvt.incl		
(1)driver-H-T	(735)	(s)5th
(1)radio tender	(776)	(c)
(1)mech.,artillery	(802)	(c)4th
(1)operator,instr.	(228)	(c)
(1)gunner,machine	(605)	(p)
(1)recorder	(743)	(c)5th
1 car, H-T,M-3,W/arm.		
6 carbines		
1 gun, submachine		
1 pistol		
1 SCR - 510		

2-6 Observation Section

2 Lt		(c)
6 Tech.,pfc.pvt.incl.		
(2)drivers,H-T	(735)	(s)5th
(2)radio tenders	(776)	(c)
(2)gunners,machine	(605)	(p)
2 car, H-T,M-3,W/arm.		
2 carbines		
4 pistols		
2 gun,submachine		
2 SCR - 510		

0-6 Howitzer Squad

1 Sgt.s .ldr.	(539)	(c)
1 cpl.,gunner	(609)	(p)
4 Tech.,pfc.pvt.incl.		
(3)cannoneers	(531)	(p)
(1)driver,SPHowitzer	(735)	(s)5th
1 gun,artillery,SP-105mmHW		
1 Trailer, 1-ton		
1 carbine		
1 gun, submachine		
4 pistols		

0-6 Howitzer Squad

0-6 Howitzer Squad

0-6 Howitzer Squad

1 Sgt.sec.ldr.	(652)	(c)
12 Tech.pfc.pvt.incl.		
(6) amm.carriers	(504)	(c)
(3) drivers,H-T	(735)	(s)5th
(3) Basics	(521)	(r)
3 cars,H-T,M-3W/arm.		
7 carbines		
3 guns, submachine		
3 rifles		

0- Amm. Sect.

Rifle Platoon

1-7		0-11	0-11	0-5		0-8
Plat.Hq.		Rifle Squad	Rifle Squad	AT Squad		L.M.G Squad
1 Lt.	(c)	Same	Same	1 Sgt.gunCmdr.	(602)(c)	Same
1 St.Sgt.,Plat.Sgt.	(651)(c)			4 Tech.pfc,pvt. incl.		
1 Sgt.,vehiclar	(653)(r)			(1)driver,75mm ATgun	(735)(s)	
Tech.,pfc.pvt.incl.				(3)gunners	(603)(p)	
(1)Driver, H-T	(735)(s)5th			1 gun AT,75mmSP		
(1)Gunner	(605)(p)			1 carbine		
(1)Radio Tender	(776)(c)			1 gun,submachine		
(2)Agent msgr.	(675)(r)			3 pistols		
1 car, H-T, M-3, w/arm.						
3 Carbines						
1 Gun, submachine						
1 Pistol						
3 Rifles						
1 SCR - 510						

0-8		
Mortar Squad Add.		
1 Tech.,pfc.pvt.incl.		
(1)Basic		(521)(r)
1 Mortar, 81mm		
1 Rifle		

USA-117a

1st Ind. PMR-shh

HQ 13th ARMORED REGIMENT, 1st Armored Division, APO 251, New York City, New York, 26 December 1942. TO: CG Armored Force, Ft. Knox, Kentucky. THRU: Military Channels.

1. Attached hereto are recommendations of Boards of Officers of elements of the 13th Armored Regiment, which have been engaged in operations in N. Africa from November 8, 1942, to present date, for such consideration as deemed appropriate.

2. In the period under consideration operations included landing on a hostile shore and attack to secure the airfields and Port of Oran, a difficult march through mountainous country to contact in Tunisia, preceeded by operations of the 2nd Bn., 13th A.R., with the British, and finally a brief offensive operation in the vicinity of Tebourba, followed by defensive operations north of Medjez el Bab and movement to an assembly area for refitting. In evaluating the recommendations these considerations, in addition to a consideration of the terrain in this particular territory should be taken into account.

3. No attempt will be made to evaluate the recommendations made in basic documents. It should be understood that they are based upon experience of the officers making them. My own comments concerning materiel, organization and tactics are based upon my own observations and the ideas gleaned from having talked with numerous officers and men of the Command.

4. MATERIEL: The definite need for the following equipment has been established if we are to meet successfully the German: a. Only the finest and most up-to-date medium and light tanks can meet successfully modern German equipment. The M3 light and M3 medium tanks are definitely second-rate against the German MARK III or MARK IV.

b. Gun-power of medium tanks should be increased either by improving the present weapon and ammunition or by placing a more powerful weapon in the tank.

c. Neither the medium tank nor the halftrack constitute a satisfactory Command vehicle for Battalion and higher Headquarters. A special vehicle should be provided on tracks and should include overhead protection against straffing and dive-bombing. Accomodation should be sufficient for the Commander and Operating Staff.

d. The inclusion of Anti-tank guns in each tank company is highly desireable if close coordination on the Battlefield is to be had. If not included in the companies, these guns should be included in the Battalion Headquarters Companies. They should be mounted on the tank chassis appropriate to the unit to which assigned.

e. All tanks should be provided with a Mortar to be fired from inside. This is especially desireable from the standpoint of smoke.

f. Existing messing facilities are not satisfactory in Campaign. Each vehicle should be provided with a small gasoline-burning heater. The complicated kitchen trucks are only satisfactory in rear areas.

g. Dual-mount .50 cal. machine-guns with AA ground-mounts should be placed on all possible vehicles.

h. A suitable pyrotechnic device with necessary ammunition should be placed in all Command Vehicles from the section to the regiment inclusive.

i. Every combat vehicle should be provided with 4 colored flags for use in transmitting messages by prearranged code.

j. The halftrack has not proved satisfactory as a medical vehicle in Regimental echelon. The wheeled ambulance will better serve the needs of the Regiment.

k. The proportion of motorcycles should be increased. The present allocation is not sufficient to provide messenger service and traffic control during movement.

l. The Walkie-Talkie Radio (536-B) should be included in the equipment of Reconnaissance vehicles and issued at the rate of 2 per Assault Gun and Mortar Section. This will greatly improve reconnaissance, observation, and fire control.

m. All personnel authorized field glasses by T/BA should be equipped with M3 glasses. The EE is of very little value, if any. In addition, certain personnel in Reconnaissance Platoons should be equipped with 8 or 10 power glasses or perhaps a telescope. In the operations just finished, our troops were at a great disadvantage in this respect.

n. Experimentation should be undertaken with a view of replacing all sponge rubber with non-inflammable material and with the substitution of steel for rubber tracks. This would relieve the rubber situation as well as eliminate existing fire hazards.

o. Experimentation should be undertaken with a view of providing non-inflammable clothing for tank crews. Burns have constituted a large proportion of tank casaulties sustained.

p. All tanks should be provided with simple devices for laying weapons in elevation and direction in a hull down position. Improvised methods have been worked out and are reported to have given good results on several occasions.

5. ORGANIZATION: It is suggested that the organization of the Armored Division be re-studied. It is believed to be over-strength in the rear echelon and improperly constituted into Combat Commands. These operations have demonstrated that successful operations can only be conducted when the personnel is thoroughly instructed, trained, and understood by the senior officer commanding. In the present organization extreme flexibility has destroyed a proper understanding of all personnel which might fall under the command of a single individual. This is fundamentally wrong, and should be rectified. It is also believed that the Armored Division is too large, particularly in this Theatre. It might not be in others, where conditions are different.

6. While the Regiment did not function as such in the operations under observation, it did direct operations at X-Ray Beach and the advance on Oran, and did act as the coordinating agency at the front when the situation made this mandatory. It further demonstrated its value as a training agency, as can be seen by the performance of its subordinate elements, and by the performance of its staff, which played an all-important part in the planning and the execution of operations by CC/B.

7. The necessity for the inclusion of Anti-tank and Anti-aircraft weapons in the battalion and lower echelons of command, has been demonstrated. The tendency to provide battalions with excessive overhead -- service and maintenance -- should be resisted. This campaign has been on the British pattern where small un-supported units have operated. When the Regiment is

employed en masse on assigned missions a pooling of supporting echelons, as contemplated in the current organization is believed to be best.

8. The results achieved in these initial campaigns can be attributed to many factors, including preliminary training. These operations have demonstrated a lack of preparation in the small units. This was no surprise. A strenuous effort had been made to improve this, but not entirely with success. Tank leaders must be thoroughly instructed in tank direction and fire control. Following this basic crew instruction, the various echelons of Command should be thoroughly instructed until finally the battalion becomes a coordinated team. Maneuvers are of value principally to staff officers and higher commanders and to habitutate all personnel in the conditions of campaign. Small unit instructions has not been sufficiently emphasized.

9. Tank gunnery must be improved. This can only be accomplished by meticulous drills and by sufficient firing, including firing with service ammunition.

10. An Armored Force cannot operate successfully against a first-class enemy unless provided with satisfactory air cover. This entails close coordination between air and ground elements at the front. This coordination cannot be accomplished by remote control but must be accomplished by the ground commander at the very front.

11. In the operations just finished, the enemy's air-ground coordination was just about as perfect as described in the books, while ours was non-existent; in fact, our own planes, unfamiliar with our organization, on at least one occasion, acted against us, and we, in our turn, acted against friendly planes.

12. Neither our successes nor our failures in the operations just concluded show anything new in tactics. The tactics employed were not necessarily correct even when successful. Serious risks were taken, and sometimes succeeded. Wrong dispositions particularly in our defensive roles, were carried out as ordered with unsatisfactory results. This was anticipated by those on the ground. One thing stands out and that is that coordinated Armored attack, supported by air is decisive. This was demonstrated at Oran and again by the Germans at Tebourba and in the German operations north of Medjez el Bab.

6 Incl:
Rpt, B of O Prcdgs fr:
HQ Co 13th AR
1st Bn, 13th AR
2nd Bn, 13th AR
Serv Co, 13th AR
Maint Co, 13th AR
Rcn Co, 13th AR

P.M.ROBINETT,
Brig. Gen., 13th Armd. Regt.,
Commanding.

HEADQUARTERS COMBAT COMMAND
FIRST ARMORED DIVISION
APO 251, New York City, New York

LEO/ct

In The Field
30 December 1942

SUBJECT: Organization, Equipment and Tactics of Armored Troops.

TO : The Commanding General, Armored Force.

1. During the period from November 8 to December 11 this command has engaged in active operations which included a landing on a hostile shore and combat for three (3) days against the French, a forced march of about seven hundred (700) miles, and a period of ten (10) to fourteen (14) days of active operations against the Germans. Since December 11 only minor elements of this command have been engaged. Believing that lessons learned in actual combat would be of value, a board of officers was convened in each unit to consider what changes in organization, equipment and tactics should be made. The reports of these boards are submitted herewith. It is believed that they should be carefully evaluated and that certain changes should be made.

2. In evaluating these reports it should be realized that practically none of our operations in Tunisia have been in accord with our conception of the proper use of an armored force. The British First Army, consisting essentially only of two brigades of their 78th Division and a detachment of their 6th Armored Division, moved as rapidly as possible to the eastward, after landing at Algiers, in the attempt to secure Tunis and Bizerte before the Germans could become established there. In doing this they ran great risks and became very much over-extended and vulnerable. It had been my hope that this command would arrive on the scene in time to continue the push into Tunis and Bizerte. Instead we arrived just in time, in my opinion, to save the British 78th Division from destruction. We did outpost duty in vulnerable and exposed positions and had to oppose our light tanks and 37mm anti-tank guns to German Mark III and Mark IV tanks and 88mm anti-tank guns. We suffered rather severe losses, especially in vehicles. While apparently used in an incorrect role, it must be realized that we were used in the only role possible under the circumstances, and that such situations are apt to recur in the future.

3. In forwarding these reports I do not attempt to evaluate them or to comment on all the recommendations made. I do wish to make certain suggestions resulting from my own experience and observation and from talks with others.

4. TACTICS. I know of nothing in connection with our operations to date which indicates that our tactics, as taught, are wrong. We did not always do as we were taught to do. We tended to rush blindly into battle, neglecting reconnaissance and minor tactics. This the German does not do.

5. ORGANIZATION. a. I am convinced that our organization is defective. In these operations the staffs of the 13th Armored Regiment and of Combat Command "B" have been combined. The tank battalions as well as the two infantry battalions have been used as separate battalions. The combination of the two staffs has not worked badly in this instance, due to its relative permanence. As a temporary

expedient of a few days duration I do not believe that it would work at all well. Either the combat command or the regimental headquarters should be eliminated. My own solution would be to eliminate the regimental organization altogether and have for both tanks and infantry independent battalions such as exist in the artillery. Division headquarters should then include an infantry section, similar to the present artillery section, to supervise the training of the infantry and a tank section to supervise and coordinate training of the tanks. The combat command should include a headquarters company to replace the present inadequate detachment and a reconnaissance company replacing the present regimentalreconnaissance company. Each battalion should have its own maintenance and supply, with supporting echelons in the division as at present.

b. The division includes too small a proportion of infantry to tanks. I would decrease the number of tank battalions to four and increase the infantry to the same number. However, our division should be more flexible as to organization, depending on the theatre in which it is used. The proposed organization by battalion would promote flexibility. The number and proportion of battalions of tanks, infantry and artillery can readily be varied to meet the particular situation.

c. Keeping medium and light tanks in separate battalions is incorrect. They should be used together. The light tanks should be used for reconnaissance and security, the medium tank to give punch. In this theatre I would use only medium battalions, each battalion having however, a reconnaissance platoon including about ten (10) light tanks and each company a reconnaissance section including two light tanks.

d. In this theatre the engineer bridge company need be only half as large as at present, additional equipment being available in army depots. Also for this theatre one of the engineer work companies could be eliminated.

e. In general it appears that the division echelons for maintenance and evacuation are excessive. They should be reduced in size and supplemented when needed by Corps and Army troops.

6. EQUIPMENT. a. Probably the most serious deficiency in our equipment brought out in our operations to date is the fact that the 37mm gun is non-effective against hostile tanks. This was already known, but not adequately appreciated. It is believed that our 37mm AT guns must be replaced by larger and more effective ones. The German uses 88mm guns to screen his tanks against ours. He uses his tanks against ours only when absolutely necessary, or when he can oppose his larger tanks to our light ones. His typical operation is to use his AT guns as a screen against our tanks while his tanks oppose our infantry. Our infantry must have AT guns which will be effective against his tanks. I would also integrate AT guns in our tank platoons, or equip at least one tank of each platoon with a high velocity 75mm gun.

b. An armored vehicle for reconnaissance, messenger service, etc., is

badly needed. The peep gives no protection whatever. The half-track is not sufficiently maneuverable. A vehicle such as the six wheel Ford chassis, which I saw at Fort Knox a year ago, with a suitable body, would be about right.

c. Development of suitable Diesel engines for our tanks would be a godsend. Maintenance should be simplified, range of operation increased, and danger from fire reduced thereby.

7. While not having application solely to the armored force, one of the things most forcibly brought to my attention in recent operations is the fact that small units should not be detached from their parent organization for operation with troops of a different nationality. Our units have been mis-used at times because our conception of their proper use is different from that of the command under which they were operating. This tends to breed misunderstanding and ill will between allies, whereas every effort must be bent toward fostering trust and mutual understanding between our troops and those of our British and French allies.

LUNSFORD E. OLIVER,
Major General, U. S. Army,
Commanding.

E-117a

HEADQUARTERS FIRST BATTALION THIRTEENTH ARMORED REGIMENT
Office of the Battalion Commander

In the Field
A.P.O. 251, c/o Postmaster
New York, N. Y.
December 20, 1942

SUBJECT: Recommendations of Board.

TO : Commanding General, Thirteenth Armored Regiment.

1. In compliance with memorandum Headquarters C.C.B., December 14, 1942, a board of officers consisting of the following officers was held:

Lt. Col. John H. Todd 0-330365	- President
Major F. F. Carr 0-24505	Member
Capt. Morris Siegel 0-418521	Member
Capt. Gerald Gowell 0-24174	Member
1st Lt. P. H. Killey 0-412763	Member

Recommendations of Board

The following recommendations for changes or improvements in organization, tactics, or equipment of this command, based on experiences of the recent operations are hereby submitted:

A. Equipment and Organization.

1. Reconnaisance platoon Headquarters Company, Battalion: recommend that a reconnaisance platoon:

a. Be equipped with four (4) armored cars with 37mm or 47mm guns, two (2) amphibious peeps, two (2) regular peeps.

b. These vehicles be divided into two sections with two armored cars, one amphibious peep, one regular peep, in each section.

c. The armored cars and amphibious peeps be used for reconnaisance, the regular peep for liasion work only.

2. Assault Gun Platoon Headquarters Company, Battalion: recommend that

a. The assault gun platoon consist of six guns - three 75mm Howitzers and three rifles, 90mm or better. The Howitzers have proved an effective weapon in this command against enemy guns, the rifle, against enemy tanks.

b. These vehicles all be full track vehicles, and be employed as a battery if supporting artillery is not available.

3. Mortar Platoon Headquarters Company, Battalion: recommend that:

a. Mortar vehicles be full track vehicle with permits forward fire, on style of Bren gun carrier.

4. Light Tank Companies: recommend that,

a. Light tank platoons consist of five (5) light tanks with at least 50mm guns.

b. A 75mm rifle mounted on light or medium tank chassis be a tactical component of each platoon, and proceed to operate tactically within it's own platoon.

c. All company and battalion command vehicles be armored on top and sides; on full tracks; and capable of keeping up with elements of its command.

d. These vehicles have room for Command Post facilities. It is impossible to control a light tank outfit from a tank in battle, and it is absurd for half-tracks to be in assault waves of attacking tank columns as has been done in the past in this organization to maintain communication and coordination.

5. Medical Detachment: recommend that:

a. Half-tracks be discarded as ambulances and that field wheel ambulances, large enough to carry four litter patients and an alleyway between beds, be substituted therefor. These vehicles should have blackout facilities.

b. Medical chest 1 and 2 be done away with for field operations and only essentials such as bandages; carlisles, large and small; sulfamilimide powder; morphine syrettes; tourniquets; cotton; splint set; and alcohol be carried within the ambulance. There should be shelving at top of ambulance instead of chests for this equipment.

c. Ambulance posts between advance elements and Regimental Headquarters be established.

d. Battalion aid stations remain in rear of battalion Command Post at all times until casualties are evacuated.

e. Personnel in battalion aid section be cut down to ten-men.

f. Battalion aid section include three ambulances and one peep.

6. Maintainence: recommend that:

a. A maintainence tank be incorporated in each company equipped with grappling hooks to remove disabled tanks during battle. A medium tank chassis with a boom is suggested, with a 50mm gun for protection.

b. Other vehicles in company maintainence be half-tracks.

c. Battalion maintainence have two such maintainence tanks, one 6 x 6 cargo truck, and one peep for battalion motor officer. The truck should be kept in rear echeleon supplied with tools.

7. Radios: recommend that:

a. Reconnaisance platoons have 193 C.W. radio, and that other vehicles be equipped with best F.F. sets available.

b. All companies have at least two 193 C.W. sets.

c. Battalion headquarters have at least two 193 C.W. sets,

d. All other vehicles in battalion equipped with best F.M. sets such as noted in 2nd Armored Division by undersigned.

e. Medics and maintainence have at least one good radio to assist in evacuation and location of casualties.

8. Field Glasses: recommend that:

a. The field glasses now employed by this command, very poor substitutes for the naked eye, be replaced with 10 power glasses with 40mm aperture.

B. Tactics: recommend that,

1. A light tank battalion not be used to hold a front line sector or be used as an outpost for infantry. If the above situation should exist through necessity, that the tanks be withdrawn through an infantry screen at night. Light tanks be held in mobile reserve for explortation of a break through, and flank protection during a battle. They not be used in direct assault on prepared enemy A.T. positions or to combat heavier tanks.

2. Before a light tank battalion is committed it be preceded by a thorough ground and air reconnaissance. A coordination of all arms (air, artillery, tanks, infantry, tank destroyers) from one forward command throughout the battle is an absolute necessity. An attack on prepared positions should be preceded by a devastating air or artillery bombardment. Without proper air reconnaissance and support during battle and "the man" in front lines controlling all forces we can never hope to achieve any amount of success against an organized enemy such as the Germans. Day after day during the past operation we were harassed continually by all types of enemy airplanes in close support of their front line troops. Air power should become an integral part of an armored division.

3. Tank destroyer units work at all times in close coordination with tanks.

JOHN H. TODD
Lt. Col. 1st Bn.
President

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HEADQUARTERS SECOND BATTALION 13TH ARMORED REGIMENT
In the Field

Dec. 21, 1942.

SUBJECT: Recommendations for Changes and improvements in Organization, Tactics and Equipment of a Medium Tank Battalion.

TO : Commanding General, Combat Command "B".

1. In compliance with Memorandum, Headquarters Combat Command "B", 334/AG, dated 14 Dec. 42 the following recommendations based upon the experiences of this Battalion since its arrival in North Africa on Nov. 8, 1942 to date are submitted:

2. TANKS - Since many of the deficincies of the M-3 tank have been remedied in the M-4 tank no reference will be made to those faults which it is known have been corrected.

a. Vision - The observation of the tank commander when it is buttoned up is poor and limited. This should be corrected by improved vision slots or a periscope arrangement permitting all around observation.

b. Armor - The armor plate is inadequate to withstand the anti-tank fire to which it is exposed and should be increased or improved. Additional protection for the gas tanks is recommended to reduce the number of fires and resulting loss of personnel and equipment that have been suffered when gas tanks have been penetrated.

c. Noises - The noise of the motors should be muffled to a much greater degree to make it possible for the tank to move with some amount of secrecy when cover or darkness makes that possible.

d. Exhaust - The flash of the exhausts should be shielded to prevent providing an easy target while moving at night.

e. Silohouette - The current medium tank models present altogether too large a target and should be redesigned so as to reduce height.

f. Mortar - Each tank should be armed with a 60mm mortar mounted in the same manner as in certain models of British tanks. This would enable them to neutralize points of resistance which can not be reached otherwise by the present armament and which [redacted] in many cases have held up the advance.

g. 75mm Gun - This gun and ammunition should be improved to provide a higher velocity weapon and projectile to cope with the heavier enemy tanks the frontal armament of which seemed to withstand our armor piercing ammunition. Considerable difficulty was experienced with 75mm gun jamming. In most cases the trouble was that the empty case could not beeejected. While this may have been the result of defective ammunition in some instances it is believed it was also traceable to faulty ordinance. If at a later date the tactical situation permits it is recommended that these weapons be test fired to determine the exact nature of the trouble.

h. Stabilizer - This equipment is entirely unable to stand up under campaign conditions and not one tank went into battle with a stabilizer in operation. It is recommended that their installation be discontinued until a satisfactory model is developed.

3. MAINTENANCE -

a. Additional Equipment - Each company should be equipped with a 2½ ton 6x6 truck with lifting boom and winch and the additional personnel to operate the same. This would provide facilities for vehicular evacuation and repair which now must wait until regimental maintenance can come into action.

b. Substitute Equipment - In the case of headquarters company it is recommended that the 2½ ton truck be added to its present equipment while with the line companies it is recommended that this truck plus one ¼ ton truck be substituted for one of the maintenance section H-T's. Most repairs in the field are effected by the use of spare parts at the point where the vehicle is disabled. In active operations one ¼ ton truck is not adequate per company to transport parts and personnel to the desired places. These lighter vehicles normally are much more satisfactory for this purpose than a H-T.

4. COMMUNICATIONS -

a. Type - The present FM tank radios should be changed to AM sets. This is recommended because of the difficulty in keeping the present sets tuned.

b. Repair - A radio repair section for the battalion complete with repair vehicle is recommended. Communications were out much of the time when they could have been made operative if such a section had been at the disposal of the battalion.

c. Maintenance Sections - A short range radio should be added to a ¼ ton truck in each maintenance section so as to enable the company command vehicles to call them up when needed.

d. Reconnaissance Platoon - It is recommended that the reconnaissance command H-T be equipped with a SCR ~~XXX~~ 193 to increase its radius of contact with battalion and that a SCR 510 be installed in each scout section so that they can have radio contact with the section command H-T which they now lack.

e. Assault Gun Platoon - It is recommended that a portable radio be provided for each gun in the platoon for use by the forward observer.

f. Tank Companies - It is recommended that each company be equipped with six SCR 536's to be available for use with forward observers when the tanks are employed as artillery in defiladed positions. It is further recommended that each tank be equipped with a two way radio.

5. Anti-Aircraft Defense - Each H-T and ¼ ton truck should be equipped with a .50 Cal. MG mounted on a pedestal mount. A proper ammunition box should also be provided.

6. Anti-Tank Defense - It is recommended that each company be provided with three armored self propelled anti-tank weapons. These should be high velocity guns of a calibre sufficient to knock out those enemy tanks that are now in use.

7. Messing Facilities -

(a) It is recommended that each mess section be equipped with a ¼ ton truck to facilitate the transporting of food containers from kitchen trucks to forward elements. It is also recommended that a water trailer be provided for each company and a small field range for each vehicle.

8. Assault Gun Platoon -

(a) It is recommended that the guns of this platoon be mounted on a medium tank chassis and that a ¼ ton truck be furnished the platoon equipped with a SCR 510 radio to be available for reconnoitering gun positions.

9. Personal Equipment -

(a) It is recommended that all tank crew members armed with the pistol be equipped with a shoulder holster which will permit its being worn in the tank with less likelihood of loss if the tank has to be evacuated.

(b) Every combat and reconnaissance vehicle commander should be equipped with field glasses.

(c) It is recommended that those members of the H-T vehicles who are now supposed to be armed with the carbine but in fact have the '03 Springfield rifle be equipped with the Thompson sub-machine gun.

(d) It is recommended that a boot approximately ten inches high with a reinforced sole be substituted for the present issue shoe.

10. Tactical Employment - Many lessons were learned and the importance of certain fundamentals was emphasized in the recent operations. The more important of these are as follows.

(a) Reconnaissance should be thorough and continuing and combat elements should not be committed if at all possible until complete reconnaissance has been made of at least the terrain to be covered initially.

(b) When ordered to attack this does not mean that one must close with enemy but he can be engaged by fire or fire and movement.

(c) Caution must be exercised in closing with enemy tanks as they are usually protected by anti-tank weapons.

(d) Supporting weapons should be allowed sufficient time to get into position before an attack is launched.

(e) The importance of control can not be over emphasized and the units of a platoon should always be on the look out for signals from the platoon leader as to desired dispositions of the platoon.

(f) Supplies should not be dumped in excess of those needed to replenish items expended for combat element in an active theatre. This was done in the recent operation with the result that a considerable quantity of valuable supplies fell into enemy hands.

These reports submitted by the following board of officers:

HENRY E. GARDINER,
Major, 13th Armd. Regt.,
President of Board.

JAMES S. SIMMERMAN,
Major, 13th Armd. Regt.,
Member of Board.

GEORGE L. MENARD,
Capt., 13th Armd. Regt.,
Member of Board.

RECONNAISSANCE COMPANY
6528 - F

USA-117a

In The Field
APO 251, U.S. Army

21 December 1942.

SUBJECT: Recommendation for changes or improvements in organization, tactics, or equipment of C/C "B"

TO : Commanding General, C/C "B" (Thru Channels).

1. Organization:

a. Each unit in the combat zone should know definitely what friendly troops are and where at all times.
b. Have a definite reserve established and alerted, composition determined by the particular operation.
c. Attached air support should be available, having direct air liasion with forward combat troops.
d. Should have proportion of two infantry regiments to every armored regiment in the command.

2. Tactics:

a. Employ air support during attacks to facilitate development of the situation.
b. Have striking force composed of medium tanks with light tanks used for reconnaissance in force and flanking movements.
c. Armored force units should not be employed as a holding force and for outposts, then be expected to operate efficiently as a striking force when an attack is executed.
d. More attention given to complete rest of combat troops when relieved from front line duty.
e. Tanks should have close-in artillery, air, and infantry support when in attack.
f. Greater use should be made of battalion assault guns and mortar platoons while tanks are making an attack.

3. Euipment:

a. Modification in combat uniforms to facilitate the means of relieving oneself.
b. Sleeping bags in lieu of blankets and rolls.
c. Small cooking stoves provided per vehicle crew for preparing canned rations while away from kitchen truck facilities.
d. Armored cars for reconnaissance elements.
e. 40% tracer, 60% A.P. ammunition for armored vehicles machine guns.

Gerald S. Yeiter

GERALD S. YEITER
Capt., U.S. Army
Commanding

HEADQUARTERS THIRTEENTH ARMORED REGIMENT
Office of the Regimental Surgeon
APO 251, c/o Postmaster New York City

In the Field
31 December 1942.

SUBJECT: Recommendations to Improve Medical Service of the Armored Regiment.

TO : Commanding General, 13th Armored Regiment.

1. Based on the recent operations of the Thirteenth Armored Regiment, the following recommendations to improve the medical service in the Armored Regiment are made:

a. Three wheeled type ambulances should be placed in the headquarters section of the detachment (one for each Bn). Transportation of wounded in halftrack type of ambulances for more than very short distances is not satisfactory as adequate heat cannot be maintained and this adds to the shock of the wounded.

b. All medical equipment such as the No. 1 and No. 2 Medical Chests should be left in the rear areas. These chests are of no use in combat and take up much-needed room.

c. The Germans have displayed evidence of having a desire to respect the Red Cross. All medical vehicles should be clearly marked with the Red Cross and each vehicle should have a Geneva Convention flag flying from a prominent place on the vehicle.

d. There should be some facilities provided for treating casaulties under blackout conditions. The Command Post type of tent would be satisfactory and one tent of this type for each section of the detachment should replace the pyramidal tent.

e. One morphine syrette should be issued every man that goes into combat. It would be highly desireable if this could be packed in the first aid pouch along with the sulfonilamide and first aid dressing. If all of these items could be in the same metal container it would help preserve them.

f. Burns were the most common casaulties in the tank companies. Every man assigned to duty in a tank should be given a tube of ointment for the treatment of burns.

John M Samuel

JOHN M. SAMUEL,
Major, M.C.,
Regimental Surgeon.

13A-11a

HEADQUARTERS THIRTEENTH ARMORED REGIMENT
Office of the Regimental Commander

December 31, 1942.

REPLACEMENT REQUISITION

	Off.	EM
Reconnaissance Company	1	8
HQ Company, 1st Bn.	0	0
Company "A" (1st A.R. attached 2)	2	9
Company "B" (1st A.R. attached 1)	2	2
Company "C"	0	21
HQ Company, 2nd Bn.	0	10
Company "D"	1	72
Company "E"	2	65
Company "F"	2	10
	10	197

Recapitulation

Army Classification No.	Description	
2nd Lieutenant - - - -	Reconnaissance experience - -	1
	Armored vehicles	
2nd Lieutenant - - - -	Light Tank experience- - - -	4
	Qualifications in all arms including 37mm & 75mm	
2nd Lieutenant - - - -	Medium Tank experience- - - -	5
	Qualification in all arms including 37mm & 75 mm	10
1st Lt. (Medical)		3
		13
736 - - - - - - - - -	Driver, Tank, Medium- - - - -	65
736 - - - - - - - - -	Driver, Tank, Light - - - - -	45
616 - - - - - - - - -	Gunner - Radio tender - - - -	35
605 - - - - - - - - -	Gunner, Machine - - - - - - -	17
607 - - - - - - - - -	Gunner, Mortar- - - - - - - -	15
766 - - - - - - - - -	Radio Operator, High Speed- -	15
405 - - - - - - - - -	Clerk, typist - - - - - - - -	5
		197

For the Commanding General:

Wayne R. Cook
WAYNE R. COOK,
Major, Cav.
Adjutant.

WRC/gm

Maintenance Company
6528-F

USA-117a
1st

21 December 1942

Subject: Recommendations for Improvement in Maintenance Companys of an Armored Regiment.

To : The Commanding General, Combat Command "B".

1. Based on unnumbered Memorandum, December 14, 1942, the following recommendations for changes to improve the performance of maintenance companys in combat are respectfully submitted.

2. Provide at least two (2) security patrols of at least twenty (20) men each to aid in battlefield recovery of vehicles. These two (2) patrols might be substituted in place of the tank platoons now part of the company.

3. Although it is never wise, under present conditions, to send out patrols of more than fifteen (15) men per patrol, additional men should be available to replace and relieve other members of the patrol. At least five (5) men additional for each patrol.

4. The work is very hazardous and nerve racking. Often involving long marches on foot over rough or plowed fields following a compass course. For the above and other reasons similar thereto, the men should be well trained and carefully chosen. Men from rural sections or men used to living in the open make better material. They are not frightened by the many normal night noises and are less likely to become lost. These points are important as most recovery work is done at night.

5. Small groups are necessary for these patrols operate similar to infantry combat patrols and as in the case of the combat patrol, control and communication are very difficult.

6. The equipment and arms could be similar to a combat patrol except that in addition to the side arms a light machine gun per patrol and a 60mm mortar per patrol should be carried to help defend an outposted vehicle.

7. All weapons should be equipped with lumnious sights. The machine guns might have standard aircraft MG sights with lumnious paint on post and rings.

8. Some type of head covering different from the standard steel helmet, which resembles the German helmet and confuses our allies.

9. During an attack someone should be watching the progress of the tanks with a view to recovering those tanks that were casualties. He should have no other duties at the time and should be someone competent to lead a recovery party and the necessary vehicles and tools to the disabled tank by the best route taking care to pick a covered approach and proper position to effect quick and easy recovery of a disabled vehicle. This observer should be prepared to act as guide to a recovery party and would report <u>all</u> casualties to the <u>Regimental Maintenance</u> or <u>party doing recovery</u>. This observer should be furnished whatever

personnel was needed to help him. It is very difficult to operate at night even when one has been over the same ground by day. Finding an object the size of a vehicle at nite by map reference only is very difficult and in some terrain impossible without many hours work.

10. The warrant officer now attached to each battalion might well be used for this type work for his staff or helpers he might use members of the battalion maintenance section.

11. For additional guides and help the crew of any disabled vehicle should go along to recover their vehicle. A track vehicle with armor such as the M-3 medium tank chassis with the 105mm gun hull less the 105mm would be very valuable in recovering a vehicle as a supplement to 10-ton wreckers.

12. Maintenance Company recovered one 1/2-track North of Medjez el Bab which had run off the end of a culvert and lay on its side. It was daylight and due to the tactical situation a 10-ton wrecker could not be taken to the spot which was approximately five (5) miles North of Medjez. A tank was taken from a column which was dropping nack to a new position. This tank was used to drag the 1/2-track from the culvert and then to right it.

13. If an M-3 chassis with suitable hull was equipped with a winch or winches for towing, both fore and aft were available it coule be used for recovery of such vehicles as the above 1/2-track.

14. The armor on a track recovery vehicle need not be as heavy as a medium tank. It would need only a minimum of armament such as a .50 calibre MG. It could be of very low silhouette. It could be equipped with a pintle in the rear for towing.

15. A track vehicle is a much better cross-country vehicle than a wheel such as a 10-ton wrecker.

16. A track vehicle is much better for towing than a wheel vehicledue to greater traction. As the "tank" recovery vehicle would have same track area and much less weight it could navigate country forbidden a tank.

17. If possible the engine noise should be muffled for night recovery work. As silence is essential in such operation.

18. It might be possible to improvise such a "recovery" track vehicle from some of the M-3 mediums which we hope to replace. There are some whose turrets and/or guns are inoperative but the chassis is still serviceable to a limited extent. Such a vehicle might possibly be converted and "improvised" upon by our own maintenance battalion or possibly attached ordnance unit.

19. All the above recommendations and reasons therefore are based upon the experience of Maintenance Company, 6528-F, in the recent operations around Medjez el Bab and Tebourba.

/s/ Robert E. Van Zant
ROBERT E. VAN ZANT
Capt., Maint. Co.

1st Ind.

MAINTENANCE OFFICER, 13th Armored Regiment, APO 251, New York City, December 28, 1942. TO: Commanding General, Combat Command "B".

1. Believe twenty-five men sufficient for security patrol. Track vehicle for recovery discussed prior and approved - very necessary. Also use of tanks not fit for combat.

2. Personnel requirements of security patrol seem sound and equipment necessary is based on their experience.

R. J. GRONDONA,
Major, 13th Armd. Regt.,
Maintenance Officer, C/C "B".

MAINTENANCE COMPANY
Thirteenth Armored Regiment
In the Field, North Africa

December 21, 1942.

SUBJECT: Recommendation for changes.

TO : Commanding General, Combat Command "B", First Armored Division.

In compliance with the memorandum entitled Board, dated December 14, 1942, Headquarters Combat Command "B" the following report is respectfully submitted.

The suggestions listed below apply only to our own or similar unit.

Organization: The three tank platoons which now form part of our organization should be incorporated in some other echelon of the command. Their place should be taken by two platoons of approximately twenty men each. These two platoons should be well versed in night patrolling and security measures for an organization of our size in addition to being thoroughly trained in demolition work, recognition of "booby" traps, etc. The very great importance of vehicle recovery work has proved that it is vital to make the unit doing the recovery as nearly self sufficient as possible.

Equipment: One large vehicular blackout tent for night maintenance. Such a tent has already been produced by our Army, and would be a tremendous asset to this organization.

Several armored recovery vehicles to supplement our present 10 ton wreckers. A suggestion for such a vehicle would be a medium tank with the turret removed for better vision, and winches forward and rear.

Arthur B. Rolph

ARTHUR B. ROLPH,
1st Lt., 13th A. R.
Commanding.

Both suggestions good - tho I believe one 25 man platoon would serve the purpose at present

ISA-11a

1st Ind.

OFFICE OF ARTILLERY OFFICER, COMBAT COMMAND "B", APO #251, New York, New York, 19 December 1942. TO: Commanding General, Combat Command "B", APO #251, New York, New York.

1. Approved.

2. Frequency modulated radio channels for fire direction nets should be at least 400 KC apart. This separation has proven to be adequate in preventing mutual interference. Separation by less than this amount causes mutual interference to an extent which nullifies the apparent advantage to two channels.

G. E. WROCKLOFF,
Lt. Colonel, Field Artillery,
Artillery Officer, Combat Command "B".

H E A D Q U A R T E R S
27TH ARMORED FIELD ARTILLERY BATTALION
APO #251, New York, New York

18 December 1942

Proceedings of a Board of Officers which convened in the Field near Souk El Khemis pursuant to paragraph 1, Memorandum, Headquarters Combat Command "B", 1st Armored Division, dated 14 December 1942, a copy of which is attached as Exhibit "A", and par. 4, Special Order No. 83, this Hq., dated 14 December 1942.

The Board met pursuant to foregoing order in the Field near Souk El Khemis at 1400 Hours on 17 December 1942.

Members present:

Major CARL N. DEVANEY,
Major CHARLES F. MOORE,
Captain WILLIAM C. RODGERS,
Captain CLYDE E. ROBB,
Captain DALE E. SKYLLINGSTAD,
Captain GEORGE J. EARL,
1st Lt. NORMAN H. DAVIS,

Members absent:

NONE.

PURPOSE: To investigate and submit recommendations for any changes or improvements in organization, tactics and equipment of this Command, based on experiences of the recent operations.

RECOMMENDATIONS: In view of experiences gained in recent operations, the Board recommends:

Organization:-

(1) That specialized reconnaissance organizations or units be an integral part of Combat Command in order that additional and more thorough reconnaissance be made and maintained at all times.

(2) That at least one squadron of fighter observation planes, with appropriate communication facilities, be attached to a Combat Command.

(3) That two battalions of Field Artillery, instead of one, be in each Combat Command.

(4) That at least two more radio technicians be added to each Headquarters Battery of a Field Artillery Battalion.

Equipment:

(1) That each Forward Observer be furnished with one (1) Radio SCR 193 for purpose of communication with supported unit. (Separate letter has been submitted).

(2) That all .50 caliber ground mounts be replaced by anti-aircraft mounts. (Dual purpose mounts if possible).

(3) That pedestal mount for .50 caliber be put in each half-track for anti-aircraft defense enroute.

(4) That five (5) miles of light, expendable, field wire be furnished each Firing Battery.

That ten (10) miles of light, expendable, field wire be furnished each Headquarters Battery.

That twenty-five (25) miles of light, expendable, field wire be furnished each Field Artillery train.

(5) That twenty-five per cent replacement of vehicles and equipment for each week of active operation be available for each Field Artillery unit.

(6) That nine (9), twenty (20) power telescopes, observation M4 be furnished each Field Artillery unit.

(7) That one (1) trailer, one (1) ton, be furnished each kitchen and baggage truck.

(8) That one (1), 3/4 ton truck be furnished each Battery.

(9) That the issuance of 3/4 ton, 37 mm S.P. to Field Artillery units be discontinued and be replaced by 3/4 ton trucks equipped with twin .50 caliber machine guns on pedestal mount.

(10) That eight (8) complete remote control extension units for radio 293 be furnished each Field Artillery Battalion.

That two (2) complete remote control extension units for radio SCR 193 be furnished each Field Artillery Battalion.

(11) That adequate and effective long range anti-tank guns be furnished the Combat Command anti-tank units.

(12) That tanks belonging to the 27th Armored Field Artillery Battalion be delivered back to units from whence they came and that tank with radio SCR 293 be supplied to Forward Observer only when he is attached to that respective unit.

Tactics:

(1) That the Fire Direction Center should be at a distance of at least five (5) miles forward of main Headquarters Battery position and have at least one (1) Forward Observer at Fire Direction Center to be employed on call.

(2) That Field Artillery Battalions be employed as such so that it can mass its fires and not to be used as individual batterys with little or no possible coordination between them.

(3) That batteries should never be left in same position more than forty-eight (48) hours. More frequent moves are highly recommended. Five hundred (500) yards may be sufficient.

(4) That more thorough and continued reconnaissance be made by Battery Personnel for:

a. Alternate gun positions.

b. At least two (2) avenues of displacement. (forward and rear)

c. Positions of each individual gun in case of direct tank assault.

d. Rallying areas for personnel and equipment in event gun sections are employed individually in an attack or defense situation.

Note: It has been found that in many instances in case of direct assault of position the best direction to move is forward and not to rear.

(5) That near each Battery position, a Battery Observation Point be set up.

(6) That firing data be computed immediately upon occupation of a position to all avenues of approach that may be used by the enemy.

(7) That a Battery front of at least two hundred and fifty (250) yards be maintained in all positions.

The board then, at 1615 hours, on 17th December 1942, adjourned.

Carl N. Devaney

CARL N. DEVANEY,
Major, 27th Armored F.A. Bn.,
President.

Norman H. Davis

NORMAN H. DAVIS,
1st Lt., 27th Armored F.A. Bn.,
Recorder.

USA-117a

Col. McCollister

HEADQUARTERS PROVISIONAL BN.
COMBAT COMMAND "B"
In the Field

December 16, 1942

PROCEEDINGS OF A BOARD OF OFFICERS

1. A board of officers consisting of the following members:

MAJOR ALFRED H. HOPKINS---President
CAPT. WAYNE BROWNING---Member
CAPT. ARMOND DEVORITTIO---Member
CAPT. WILLARD M. HAMBLIN---Member
CAPT. CORTLAND CROMWELL---Member
CAPT. EDMOND G. ARMSTRONG---Member

convened at 13:00 hours December 15, 1942 in compliance with unnumbered Memorandum Combat Command "B", 1st. Armored Division dated December 14, 1942 and Special Order No. 2, December 14, 1942, Headquarters Provisional Bn. Combat Command "B", for the purpose of investigating and recommending changes within organization.

2. All members were present. The following recommendations were considered and are submitted:

A. No change in the T.O. are recommended

B. It is strongly recommended that all orders for movements of the trains, or any part thereof, come thru the Commanding General, the Executive Officer, or G-3. so that such movements will be tactically sound and properly coordinated.

C. Installations and supplies, including medical services and maintenance facilities, should be close enough to the fighting elements to be quickly available when needed.

D. A Medical plan should be formulated and disseminated to all units concerned prior to any action; such as, ambulances of the Medical Battalion to be used to evacuate from unit detachments, and arrangements for evacuation farther to the rear should be arranged with organizations outside of the Combat Command.

E. Paramount attention should be given to rapid replenishment of medical supplies

F. Officers and enlisted personnel should be provided to the Train C.O. to operate a casual pool, the biggest problem being the feeding and supplying of stragglers.

G. At no time in the last operations were the Unit kitchen or supply trains turned over to the Train C.O., and it is recommended that, in the future, these be collected in a centralized point when compatible with the tactical situation.

3. Exhibits:
1. Unumbered Memorandum Combat Command "B".
2. Special Order No.2" Headquarters Provisonal Bn".

4. The board adjourned at 15:30 hours December 15, 1942.

Edmond G. Armstrong
EDMOND G. ARMSTRONG
Recorder

Wayne E. Browning
WAYNE E. BROWNING
Member

Alfred H. Hopkins
ALFRED H. HOPKINS
President

ARMOND DEVORITTION
Member

CORTLAND CROMWELL
Member

WILLARD M. HAMBLIN
Member

SERVICE COMPANY, THIRTEENTH ARMORED REGIMENT
In the Field, A.P.O. 251
New York, New York

December 21, 1942

SUBJECT: Recommendations, Suggestions for Improving Operations of this Command under Combat Conditions.

TO : Commanding General, Combat Command "B".

1. A board, having duly been appointed by Company Order No. 20 in accordance with Memorandum, Headquarters, Combat Command "B", dated December 14, 1942, which consisted of 1st Lieutenants EDWARD G. McNAMARA, JOHN L. McSHAFFRY, JR. and WESLEY P. STUDER, with the Company Commander as the president, met and carefully studied all suggestions and recommendations from members of this command concerning any changes or improvements in organization, tactics or equipment of this command, based on experiences of the recent operations, and submit the following for consideration.

A. Each Battalion Section and Regimental Section be equipped with radio communication, other than SCR 510, which would be in addition to the SCR 193 and SCR 510 sets at present in Company Headquarters and Attached Trains Sections.

(1). Reason would be to facillitate the necessary movement of these sections forward to their combat units in supplying them under Combat conditions. Due to tactical situations these sections are dispersed from two (2) to five (5) miles apart in rear areas and means of present communication are not adequate to enable this Command to operate as efficiently as it could be under the proposed plan.

B. An additional Fifty (50) men to augment our present 184 T/O strength, are needed in this command to enable the Fuel and Lubricant sections to operate with two (2) men in a truck, thus facilitating the loading and unloading the trucks, to insure more safety to the drivers as well as the equipment by allowing a change of drivers on their constant runs.

(1). The present T/O set-up uses the majority of men in sections which require considerable clerical help and does not allow for the two 37 MM Self-Propel crews which take six men away from other sections in order to operate the 37 MM guns. The T/O does not consider two men per truck.

C. One water trailer be allocated to each Battalion and one for the separate Companies, which be attached to Fuel and Lubricant trains of Service Company, and they be brought forward each time the Fuel and Lubricant trucks go forward to supply their respective units and be returned daily with the empty Fuel and Lubricant trucks.

D. Each Battalion and Separate Company kitchens be equipped with sufficient thermal cans to be used to transport hot food forward to the combat units along with the Fuel and Lubricant trucks of Service Company, thus cutting down the size of convoys moving forward and back, making far better control of convoys.

E. Attached trains Section and Service Company Headquarters be furnished one peep each in addition to the present ten set-up in T/O to help in liason and control.

F. That Company Maintenance Section be authorized and equipped with one S.A.E. die set, one small A.C. spark plug sand blaster, and one neon timing light to increase the maintenance efficiency of the present 82 wheeled vehicles in Service Company.

G. Suggest that Company Maintenance Section be equipped with three 3/4 ton pick-up trucks, each armed with a Calibre .50 Machine Gun and the following equipment in each: 1 small air compressor, 1 differential grease gun, 1 transmission grease gun, 1 set of tire changing tools, 1 tire patching clamp, 1 blow torch, 1 small and 1 medium soldering iron with solder and flux, 1 tortion wrench, 1 brake bleeding hose, tire patches, spark plugs, paints, fan belts, light bulbs for tactical lights, brake linings, brake fluid, spring center pins, 1 set motor gaskets, and assorted bolts, nuts, and washers.

(a). One truck would be assigned to each Battalion Section (Separate companies and attached trains would continue to be maintained out of Service Company Headquarters) which would be able to supply adequate service for these trucks (total 18 trucks for Medium Battalion and 12 for Light Battalion) in their widely dispersed areas from the Company. A crew of two mechanics for each pick-up would come from the Company Maintenance Section.

(b). It was brought out in recent operations, that the Regimental Maintenance Battalion Sections were unable to give Maintenance to these trucks due to being occuplied with tank maintenance. It was not possible for our Sections to come back to the Company for necessary maintenance, due to distance away and constantly being on the move forward or to supply dumps, but had a set-up as listed above been available with each Battalion Section it would have saved considerable wear and tear on parts that are hard to replace under Combat Field Conditions.

Philip St. G. Cocke
Capt. Cav.

PHILIP ST. G. COCKE
Capt., 13th Armd. Regt.
Commanding

SERVICE COMPANY, THIRTEENTH ARMORED REGIMENT
In the Field, A.P.O. 251
New York, New York

December 17, 1942

SUBJECT: Recommendations, Suggestions for improving operations of this Command under Combat Conditions.

TO : Commanding General, Combat Command "B"
(Thru Channels)

1. A board, having duly been appointed by Company Order No. 20 in accordance with Memorandum, Headquarters, Combat Command "B", dated December 14, 1942, which consisted of 1st Lieutenants EDWARD G. McNAMARA, JR., JOHN L. McSHAFFRY, JR., and WESLEY P. STUDER, with the Company Commander as the president, met and carefully studied all suggestions and recommendations from members of this command concerning any changes or improvements in organization, tactics or equipment of this Command, based on experiences of the recent operations, and submit the following for considerations:

A. Each Battalion Section and Regimental Section be equipped with radio communication, other than SCR 510, which would be in addition to the SCR 193 and SCR 510 sets at present in Company Headquarters and Attached Trains.

(1). Reason would be to facillitate the necessary movement of these sections forward to their combat units in supplying them under Combat conditions. Due to tactical situations these sections are dispersed from two (2) to five (5) miles apart in rear areas and means of present communication are not adequate to inable this Command to operate as efficiently as it could be under the proposed plan.

B. An additional twenty-five (25) men to augment our present 184 T/O Strength, are needed in this command to enable the Fuel and Lubricant Sections to operate with two (2) men in a truck, thur facilitating the loading and unloading the trucks, to insure more safety to the drivers as well as the equipment by allowing a change of drivers on their constant runs.

(1). The present T/O set-up uses the majority of men in sections which require considerable clerical help and does not allow for the two 37 MM Self-Propell screws which take six men away from other sections in order to operate the 37 MM guns. The T/O does not consider two men per truck.

C. Have Battalion S-4's and Seperate Company guides meet Service Company trains at prearranged places to guide them into their respective combat bivouac areas so as to dispatch each truck immediately to the place where they are to refuel and supply the combat units, without delay, which endangers the possible loss of much needed trucks when they are left standing in hostile areas while it is being determined where certain units are located and where it would be best to dump the loads. (This delay happened not once but several times in recent action).

D. One wa[illegible] trailer be allocated to each [illegible]talion and one for the separate Companies, which be attached to Fuel and Lubricant trains of Service Company, and they be brought forward each time the Fuel and Lubricant trucks go forward to supply their respective units and be returned daily with the empty Fuel and Lubricant trucks.

E. Each Battalion and Seperate Company kitchens be equipped with sufficient thermal cans to be used to transport hot food forward to the combat units along with the Fuel and Lubricant trucks of Service Company, thus cutting down the size of convoys moving forward and back, making far better control of convoys.

F. Attached trains Section and Service Company Headquarters be furnished one peep each in addition to the present ten set-up in T/O to help in liason and control.

G. That Motor Cycle riders be equipped with Calibre .45 pistol in addition to their Sub-Machine Guns, which would permit returning of fire while moving.

H. That Company Maintenance Section be authorized and equipped with one S.A.E. die set, one small A.C. spark plug sand blaster, and one neon timing light to increase the maintenance efficiency of the present 82 wheeled vehicles in Service Company.

I. Suggest that Company Maintenance Section be authorized and equiped with three 3/4 ton pick-up trucks, each armed with a Calibre .50 Machine Gun and the following equipment in each: 1 small air compressor, 1 differential grease gun, 1 transmission grease gun, 1 set of tire changing tools, 1 tire patching clamp, 1 blow torch, 1 small and 1 medium soldering iron with solder and flux, 1 tortion wrench, 1 brake bleeding hose, tire patches, spark plugs, paints, fan belts, light bulbs for tactical lights, brake linings, brake fluid, spring center pins, 1 set motor gaskets, and assorted bolts, nuts, and washers.

(a). One truck would be assigned to each Battalion Section(Seperate companies and attached trains would continue to be maintained out of Service company Headquarters) which would be able to supply adequate service for these trucks (total 18 trucks for Medium Battalion and 12 for Light Battalion) in their widely dispersed areas from the Company. A crew of two mechanics for each pick-up would come from the Company Maintenance Section.

(b). It was brought out in recent operations, that the Regimental Battalion Maintenance Sections were unable to give Maintenance to these trucks due to being occupied with tank maintenance. It was not possible for our Sections to come back to the Company for necessary maintenance, due to distance away and constantly being on the move forward as to supply dumps, but had a set-up as listed above been available with each Battalion Section it would have saved considerable wear and tear on parts that are hard to replace under combat field conditions.

Richard D. Butts

RICHARD D. BUTTS
Capt., 13th Armd. Regt.
Commanding

COMPANY "C"
701ST TANK DESTROYER BATTALION

In the Field,
Tunisia, North Africa,
December 18, 1942.

Proceedings of a board of officers which convened in the field, Tunisia, North Africa, pursuant to Company Order No. 28, Headquarters, Company "C", 701st Tank Destroyer Battalion, a copy of which is attached as Exhibit A.

The board met pursuant to the foregoing order in the field, Tunisia, North Africa, at 0800 hours, December 18, 1942.

Members present at meeting:

Captain, F. J. Redding (O-311540), Co. "C", 701st TD Bn.
1st Lt. Robert F. Childs (O-452336), Co. "C", 701st TD Bn.
1st Lt. William C. Burghardt (O-451912), Co. "C", 701st TD Bn.

Members absent at each meeting:

None.

Each member of the board was sworn.

PURPOSE:

To investigate and submit recommendations for changes and/or improvements in tactics, organization, or equipment of this command in the light of recent operations.

FINDINGS:

1. The half-track is not a suitable carrier for a tank destroyer gun.

2. Communication was insufficient and unstable.

3. The light platoon was not employed enough to justify its existance.

4. The platoon leader does not have sufficient time to properly supervise maintenance.

5. When a platoon, within a tank destroyer company, is broken down it lacks sufficient fire power to do its job.

6. The security sections, which are used in many instances for reconnaissance, lacks speed and cross-country mobility.

7. There is a definate need for a platoon of high angle fire weapons.

8. The 75mm gun was found to be large enough to handle any armor used against us although we were definately outranged by the German 88mm Gun.

9. The glasses field (typee EE) issued now, lack power to be of real assistance in identifying enemy armor and positions.

RECOMMENDATIONS:

In view of the above findings the board recommends;

1. A 75mm gun mounted on a light tank chassis or a powerful wheeled carrier would be best suited for tank destroyer work. It is essential that the gun have 360° traverse.

2. Each platoon leader should have a 293 Radio, each gun should have a 510, and in addition, each gun should have 2-SCR 536 Radios.

3 & 7. The light platoon should be equipped as an additional heavy platoon or made into a high angle fire platoon, with two 75mm self-propelled howitzers and two 81mm self-propelled mortars. Each security section within the company should have 60mm mortars. This need was shown in our action against German infantry when we were unable to dislodge defiladed mortar positions with any weapon at our disposal.

4. There is a need for an additional officer in the company to supervise maintenance. Due to large number of vehicles the job cannot be done at night by platoon leaders.

5. It is best that our platoons operate as a unit. When used in this manner they can protect one another by fire and movement.

6. The security section should be transported either in ¼ Ton C & R cars or a carrier similar to the British Bren Gun Carrier. The half-track lacks speed, mobility, and is too noisy for light reconnaissance work. Each security section vehicle should have a radio.

8. Although our 75mm gun did a thorough job on all armor we encountered, a gun of greater range, wider traverse, and more flexibility would be better. Recommend 90mm dual purpose gun; alternate, 3 inch D.P.

9. A chief of section should have at least the M1 binocular 6 X 30, and platoon leaders and reconnaissance N.C.O.'s a twelve power glass or better.

The board adjourned at 1000 hours, December 18, 1942.

F. J. REDDING,
Captain, 701st Tank Dest. Bn.,
(President)

Robert F. Childs

ROBERT F. CHILDS,
1st Lieut., 701st Tank Dest. Bn.
(Member)

William C Burghardt

WILLIAM C. BURGHARDT,
1st Lieut., 701st Tank Dest. Bn.
(Recorder)

USA 117a

HEADQUARTERS
106th Sep. C.A. Bn. (AA)
APO #512

19 December, 1942.

Proceedings of a board of officers which convened In the Field , pursuant to paragraph 2, Special Orders No. 97, Hq. 106th Sep. C.A. Bn. (AA), dated 14 December, 1942, a copy of which is attached as Exhibit A.

The board met pursuant to the foregoing order, In the Field , at 1:00 P.M., on 19 December, 1942.

Members present at meeting:

Lt. Col. W.H. BRUCKER, O-18793, C.A.C., 106th Sep. C.A. Bn. (AA).
1st Lt. PAUL A. ECKSTEIN, O-347105, 106th Sep. C.A. Bn. (AA).
1st Lt. SAMUEL S. GREGORY JR., O-395753, C.A.C., 106th Sep. C.A. Bn. (AA)

Members absent at each meeting:

NONE.

PURPOSE: To investigate and submit recommendations for any changes or improvements in organization, tactics or equipment of this command, based on experiences of the recent operations.

FINDINGS AND RECOMMENDATIONS:

1. MOTOR TRANSPORTATION

From experience since landing at ARZEW BEACH, 8 November, 1942, it has been found that Antiaircraft Batteries need, as an absolute minimum, their Table of Organization organic transportation if they are to engage in more than a pure rear area defense mission. Furthermore, that an organization which has been strip of its motor transportation and ordered into a mobile situation should be furnish at least sufficient vehicles to move the primary tactical equipment.

This battalion attempted to move more equipment by road than the transportation available could safely move and, as a consequence, the engines in two trucks were ruined. There is a minimum of fighting equipment that must be transported in each battery and to ship this equipment by means other than organic transportation deprives it of its fire power.

2. COMMUNICATIONS

Experience during the recent campaign has demonstrated convincingly that radio communication is essential down to each gun detachment, and, further, that additional radios for use as A.A.A.I.S. O.P.s are advisable. It is recommended that four (4) additional SCR-543 sets be assigned to the Battalion Communication Section. The number of SCR-593 sets authorized by T.B.A. is considered sufficient, and it is recommended that these be obtained at the earliest possible date. It is recommended that semaphore signal sets, on the basis of one (1) per gun, platoon, and Battery Hq. be authorized.

3. MESSING

Owing to the difficulty in transporting a warm meal from a central kitchen to eight (8) different gun positions, it is recommended that each detachment be provided a small heating unit for preparing such food as Type "C" and British Compo rations.

4. INDIVIDUAL GUN EQUIPMENT

It is recommended that each platoon of an AW battery be provided with a small scoop to expedite rapid construction of gun positions. Due to the construction of the 40 mm Bofors gun, it is very vulnerable to dive-bombing, strafing, and artillery fire until it has been well dug in.

It is recommended that as part of each detachment's equipment there be designed and constructed of light wood and canvas a collapsible dummy gun. Such a dummy gun, where properly employed, would confuse the enemy as to actual dispositions and strength.

It is recommended that a light armor plate shield be fastened to the top carriage of the Bofors gun as a measure of protection from small arms fire, strafing and ricocheting.

5. TACTICAL EMPLOYMENT

Whenever an AW unit is employed with an armored force or other forward area troops, it is recommended that half-tracks be provided in lieu of two and one-half ton trucks as gun-towing vehicles, due to their greater traction and personnel protection. It is further recommended that in forward area employment the Stiffkey Stick be substituted for the director and power plant. This substitution would reduce the load of each detachment and would eliminate delicate equipment which experience has shown will not stand up under constant movement.

6. MOVEMENTS

It is recommended that in the future when AW are employed in forward areas, the gun detachments should reach their positions with at least four (4) hours of darkness remaining, in order to have a well prepared position by dawn. If short moves are to be made it is recommended that details be sent ahead of the guns in order to prepare positions prior to arrival of the battery.

The board adjourned at 2:00 P.M. on 19 December, 1942.

W.H. BRUCKER
Lieut Colonel, C.A.C.
(President)

PAUL A. ECKSTEIN
1st Lt. C.A.C.
(Member)

S.S. GREGORY JR.
1st Lt. C.A.C.
(Recorder)

Exhibit A:
Order appointing board.

USA-117a

HEADQUARTERS SECOND BATTALION
SIXTH ARMORED INFANTRY
APO 251 % Postmaster, New York, N.Y.

December 18, 1942.

A board of officers appointed by Special Order #17, Headquarters Second Battalion, Sixth Armored Infantry, paragraph Number 1, dated December 15, 1942, as directed by memo 334/AG CC"B" 12/14/42 convened at APO 251 c/o Postmaster New York, N.Y. on December 16, 1942 at 1800 hours.

The Board consisted of:

Major Herschel J. McKnight, O-225572.
Captain Dennis Hewitt, O-292762.
Captain Frank H. Vance, O-317954.
1st Lieut., Robert H. Loeb, O-407793.
1st Lieut., Henry H. Johnston, O-407362.

The board recommends if the Arm'd Infantry Battalion is to be used as intended; i.e, offensively to secure jump off line for tank attack or to attack in conjunctions with tanks and defensively only to protect tank bivouacs or to hold ground gained for short periods of time until other Infantry Troops can consolidate to the position the following changes be made in the T/O.

Recommendations:

1. Replace all M-2 Halftracks with M-3 Halftracks with exception of heavy machine gun platoon.
Reason: Armament of M-2 Halftrack unnecessary and M-3 Halftrack gives more room.
2. Replace 30 cal. heavy machine gun on command M-3 Halftracks with 50 ca l. machine gun.
Reason: Gives each Company four (4) 50 ca l. machine guns for anti-aircraft fire.
3. Delete the towed 37 MM anti-tank gun from Company Command car.
Reason: 37 MM gun not adequate against tanks at range greater than five hundred (500) yards.
4. Add one (1) M-3 Halftrack and five men to Company Headquarters section to service towed 75 MM rifle.
Reason: To provide Company with heavier anti-tank weapon.
5. Add one (1) 3/4 ton cargo truck per Company.
Reason: Transportation not adequate to handle rations, ammunition and entrenching equipment that must be carried or brought forward.
6. Add one (1) 1/4 ton truck 4 x 4 to Company maintenance section.
Reason: To facilitate column control and for use in transporting spare parts and tools when in concealed area.
7. Add one (1) 510 radio to Company maintenance section.
Reason: To give Company Commanders and platoon leaders communication with maintenance section. This will greatly speed up the location of and recovery of disabled vehicles.
8. Add four (4) walkie-talkie radios per rifle Company.
Reason: The 509 radio proved unsatisfactory in dismounted action being very cumbersome and unwieldy. The 509 radio failed to function three quarters of the time.
9. Replace trucks 1/4ton 4 x 4 with Bren gun carriers in Battalion Reconnaissance platoon and equipt each with 510 radio.
Reason: Trucks 1/4 ton 4 x 4 afford no protection to personnel and are not as manuverable when moving across country as the track vehicle recommended.
10. Add two (2) M-2 halftracks to heavy machine gun platoon.

HEADQUARTERS COMBAT COMMAND "B"
A.P.O. 251 % Postmaster, New York, N.Y.

15 Dec. 42
In the Field

SUBJECT: Engineering recommendations covering operations of CC"B" - Tunis Front - Period December 1, 1942 to December 11,1942 (Incl)

TO : Commanding General - CC"B" - 1st Armored Division - U.S. Army.

1. Submitted herewith are recommendations covering the Engineer phases of organization, tactics and equipment originated from recent operations of CC"B" on the Tunis Front.

ORGANIZATION

a. Engineering requirements of the Combat Command, as constituted during recent field operations, can be adequately and efficiently completed by one Armored Engineer Company re-inforced with bridging equipment.

b. Recent operational activities of CC"B" did not present Engineering duties sufficient to actively employ and warrant an additional platoon of Engineers now assigned to the Command.

c. It is recommended that the Staff Engineer Officer of CC"B" be furnished with personnel to assist in execution of detail and routine duties of this office.

TACTICS

a. Recommended that Engineer Troops be utilized for Engineering assignments and that duties such as Military Police, vehicle clearance of roads and guard details be assigned, when possible, to units trained and designated for these operations.

b. Road blocks placed by Engineer Units require adequate protective support and fire cover, by Combat units of the Command. Without this support the block is ineffectual and an entire loss of effort and material.

c. Mine Fields should b laid by the tactical troops in whose area the field is placed under the technical direction of Engineers. No field should be ordered laid until the Combat Command approves same as a tactical requirement. Any mine field must have protective tactical coverage in order that enemy movement be restricted to its locality and that by-passing of the field by the enemy is difficult or impossible.

d. Engineer road and bridge reconnaissance of the tactical area of the Combat Command should be more extensive and complete, covering a wider area than was the case in recent operations.

e. Engineer detachments ordered into the combat zone for special engineer assignments should remain under the command of their unit commander rather than the commander of troops in whose sector their assignment takes place. In this manner their technical operations are more closely coordinated and administration details completed.

f. In general it is recommended that whenever possible Engineer platoons have definite Armored Battalions with which they habitually operate when required. In this manner the Engineer assistance rendered the Battalion is most efficiently executed since both Officiers and men become acquainted with the missions and the coordination of operations necessary for their successful execution.

(OVER)

EQUIPMENT

a. Recommended that the vehicles be provided Engineer components operating with the Combat Command to transport, and make available for immediate use, the steel Treadway Bridge equipment to the amount of 150 of bridge minimum. This equipment to include pontoon facilities.

b. In case it is not practicable to carry the Steel Treadway Bridge equipment it is recommended that one (130') Bailey (British) Bridge Unit be available to the Engineer Unit of the Combat Command. It is evident that bridging operations are a very vital factor to the successful tactical operations of the Combat Command in the Tunisia Area.

c. The .57MM towed guns of the Engineer Unit proved inadequate as an anti-tank weapon on the Tebourah Road block.

Harry H. Arnold

DISTRIBUTION:
HQ CC"B" 5-copies

HARRY H. ARNOLD,
Major, C. E.
16th Engineer Bn.

SERVICE COMPANY ARMD. INF. B'N.

1-6 Company Hqs

1 Captain
1 1st Sgt.
1 Corporal, agent
1 Corporal, clerk
3 Technicians
(1) Driver H/T
(1) Gunner, MG
(1) Radio operator

1 Car, H/T M-3 w/armament 66b
1 SCR 193 radio

0-10 Company Supply & Mess Section

1 S/Sgt, mess
1 S/Sgt, supply
8 Technicians
(2) Chauffeurs
(1) Cook 4th
(2) Cooks 5th
(2) Cooks hlpr
(1) Armorer 5th

2 Trucks, 2½ tn incl:
(1) Equipment
(1) Kitchen

Battalion Maint. Pl.

1-1w-6 Platoon Headquarters

1 Lieutenant
1 Warrant Off, Maint.
1 S/Sgt, foreman, mech.
5 Technicians incl.
(1) Mech 4th
(1) Mech 5th
(1) Driv H/T 5th
(1) Gunner, Mach
(1) Motorcyclist

1 Car, H/T M-3
1 M/c

0-6 Battalion Section

1st Sgt, Chief of Sect.
5 Technicians
(1) Mech 4th
(1) Mech 5th
(2) Mech hlprs
(1) Chauffeur

1 Truck 2½ Ton w/super structure

0-5 Wrecker Section

1 Sgt, Ch of Sect.
4 Technicians Incl
(1) Chauffeur 5th
(1) Mechanic 4th
(1) Mechanic 5th
(1) Chauffeur

1 Truck, 10-Ton Wkr
1 Truck ¼ Ton

0-5 Welding Section

5 Technicians
(2) Welders 4th
(1) Mechan. 4th
(1) Chauffeur
(1) Basic

1 Truck 2½ Ton

0-6 Supply Section

1 Mr Sgt, Supply
5 Technicians
(1) Clerk
(2) Chauffeurs
(2) Parts men

1 Truck 2½ Ton
1 Truck ¼ Ton

1-1w-7 Bn. Supply & Trans. Sect.

1 Captain
1 Warrant Off., asst.
1 Mr/Sgt, supply
1 Sgt, Supply
1 Clerk, 5th
1 S/Sgt, Truck master
3 Chauffeurs

1 Truck, 2½ Ton
2 Trucks, ¼ Ton

0-4 Ration Section

1 Sgt, rat.
3 Technicians
(1) Chauffeur
(2) Basics

1 Truck, 2½ Ton

0-16 Fuel, Lub. & Ammun. Sect.

16 Technicians
(4) Chauf 5th
(12) Basics

4 Trucks, 2½ Ton

1-5 Personnel Section

1 Captain
1 Tech Sgt, Sgt Major, personnel:
4 Technicians:
(1) Clerk, mail
(1) Clerk
(2) Chauffeurs

1 Truck 2½ Ton
1 Truck ¼ Ton

Reason: In the case of this Battalion we actually lost one half of the heavy machine gun platoon by one direct bomb hit on a halftrack. If two cars are added it will give each squad a car and the loss of a single vehicle will remove only one squad.

11. Add one halftrack T-30 (75MM assault gun) to Assault gun platoon.

Reason: These guns should be used in pairs and by adding one gun the fire power of the platoon will have been doubled. As now set up only two guns can work at the same time and one gun is not functioning.

12. Add three trucks 1/4 ton 4 x 4 to Battalion Headquarters Company.

Reason: Each platoon leader could reconnoiter for gun positions before bringing his weapons forward. As now set up his must reconnoiter on foot and this slows up the movement of the supporting weapons into position.

13. Add one (1) truck, 3/4 ton to Battalion Medical Detachment.

Reason: Vehicles supposed to be used as ambulances are now used to haul supplies and can not function as intended.

In employing Armored Infantry it is recommended that higher commanders take cognizance of the fact that when dismounted and seperated from vehicles a rifle company is reduced to a fighting strength of 123 men.

With a corresponding reduction in fire power due to seperation from vehicular weapons which are impossible to move by hand due to insufficient personnel for gun crews and ammunition carters.

Armored Infantry should only be employed defensively where they can take up a position where their vehicular fire power and ammunition supply can be placed in close support.

In the present campaign the Armored Infantry Battalion has functioned as a seperate Battalion rather than as a part of an Arm'd Infantry Regiment. The board recommends that the Arm'd Inf can best operate as a seperate Battalion and should be so organized with sufficient service units to properly maintain the maintenance and supplyof the Battalion which is not possible when the Battalion is divorced from the Regiment.

The following is a suggested organization for a Service company for a seperate Infantry Battalion. (See Attached Sheet)

Herschel J. McKnight
HERSCHEL J. McKNIGHT
Major Sixth Armored Infantry
President.

Dennis Hewitt
DENNIS HEWITT
Capt., 6th Armd Infantry.
Member of board.

Frank H. Vance
FRANK H. VANCE
Capt., 6th Armd Infantry.
Member of board.

Robert H. Loeb
ROBERT H. LOEB
1st Lieut., 6th Armd Inf.
Member of board.

Henry H. Johnston
HENRY H. JOHNSTON
1st Lieut., 6th Armd Inf.
Recorder.

Form "B"

PRIMARY DE-WATERPROOFING OF VEHICLES
(Maintenance)

HALF-TRACK AND WHEEL VEHICLES

1. Remove the following waterproofing:
   a. Sheet over radiator.
   b. Oil dip stick.
   c. Oil breather.
   d. Clutch vents
   e. Brake breathers
      (Master cylinder air vents)
   f. Rocker arm cover vents (GMC).
   g. Fuel pump vent.
   h. Transfer case and axle pressure vents.
   i. Battery filler cap vents.

2. Check engine oil for sea water.

3. Remaining waterproofing will be removed as soon as possible and vehicle completely lubricated.

PRIMARY DE-WATERPROOFING OF VEHICLES
(Maintenance)

TANKS

1. Remove all oil silk (or rubber) over AIR INTAKE SCREEN, which is behind turret on rear deck. Must be done immediately!

2. If time available - remove exhaust chutes, and replace bolts on tank.

3. Check engine compartment for sea water.
   a. Depress cocks on floor to drain sea water from engine compartment.
   b. Lubricate idlers, track-supporting rollers and other parts as time and supplies allows.

(NOTE: Given to personnel justprior to disembarking on Assault Landing Operation).

ORAN-7 Nov '42

(Over)

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by authority of
by

COMMENTS ON ARMORED DIVISIONS T/O

I N D E X

UNCLASSIFIED

Is organisation for supply adequate? - Division must be supplemented by additional transportation to carry its ammunition and to supply it with food and fuel whenever it is more than 30 miles from rail or truck heads. Fuel dispenser company is not a part of the Division and is required whenever fuel is furnished in other than 5 gallon containers.

Is organization for air support adequate? - It is necessary to have air support party attached to the Division well in advance of the operation in which air support is to be used. This party used in conjunction with our present air request units should provide adequate communication with such air support as may be available.

Do troops arrive properly equipped for combat? - Each man arriving in North Africa carried at least 50 lbs in excess baggage probably because our employment in this theatre was not foreseen when we left the U. S. 6 months ago. Each man has in addition to his combat suit a woolen blouse, a woolen overcoat, and woolen underwear, 2 bed sacks which he normally has no use for, 2 pairs of goggles, 1 of which was issued about a couple months ago aboard ship as well as an unusually complete personal kit for chemical warfare protection. It will be necessary for us to store much of the contents of the "A" bags now with troops and leave behind when we go into action as we left much excess equipment in the "B" bags in North Ireland.

What recommendation do you have for the improvement of equipment? - Lower silhouette for our tanks not only to improve their tactical efficiency on the field but make them less conspicuous and also to permit them to get through railroad bridges, railroad tunnels and into the holds of ships without being modified each time they have to be used. Our open top vehicles are inadequate for the use of troops such as those subject to air attacks as ours have been on the Tunis Front but I understand that this matter has already been taken care of by vehicles now in production.

Is communication equipment adequate? - Communication equipment is probably the best in the world and when received in full quantity with crystals for each design will be fully adequate.

What is your regard to the SP? - So far as we are concerned we are unanimously in favor of SP artillery.

Describe recovery of equipment? - We have only 10 ton wreckers and no tank transporters. In one instance, 2 ten ton wreckers were unable to pull a medium tank out of the mud on the Tunisian Front.

Describe step taken to acclimate vehicles. - No special measures necessary to acclimate 1st Armd Div vehicles to North Africa theatre.

CONFIDENTIAL

The use of rubber boats with steel treadways [illegible]rations at Oran was responsible for getting large quantities of armor ashore in a minimum of time thus contributing directly to the quick successful completion of that operation. This is the first time that rubber boat bridges have been so used. In the later stages of operations at Oran the rubber boat bridge was used as a raft in an attempt to land vehicles in rather rough water and 16 half-tracks were thus lost.

What suggestions for training for our Engineers? - Our engineers must have practice in removing mines and blasting ways through mine fields. We have had some experience along these lines by artillery.

We found that the Autocar trailer with bridge equipment extremely difficult to get around sharp turns or roads in North Ireland sometimes causing traffic jams for hours. It is desirable to have a truck with power device capable of handling the treadways.