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TITLE: **Combat Leading of the 2d Armored Division for Amphibious Operations**

SCOPE: **1942-1944 - Invasions of Morocco, Sicily and Normandy.**

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MOROCCO

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MOROCCO

1. GENERAL

Operation TORCH, in brief, was the invasion of Morocco. This operation was executed by Western Task Force under the command of Major General George S. Patton, Jr. The plan called for landings at three different places on the coast of Morocco -- SAFI, FEDELA, and Port Lyautey.

The force landing at SAFI consisted primarily of the 47 Infantry Regiment of the 9th Infantry Division, plus a landing team of the 2nd Armored Division. This operation was called BLACKSTONE and under the command of Major General Ernest N. Harmon.

The force landing at FEDELA consisted primarily of the 3rd Infantry Division reinforced by a landing team of the 2nd Armored Division. This operation was labeled YOKE (BRUSHWOOD) and under the command of General Anderson.

The force landing at MEHDIA - PORT LYAUTEY consisted mainly of one regiment of the 9th Infantry Division and a landing team of the 2nd Armored Division. The operation was under the command of Major General Truscott.

Although this landing was on a hostile shore it was hoped that the French would not resist and would join the causes of the Allies. This invasion date-- D day, was 8 November 1942.

It is not the purpose of this author to write on the economical, political or tactical aspect of the Moroccan invasion, but only that part as affected the combat loading and unloading of the 2nd Armored Division.

2. LOADING

a. <u>General</u> - All elements of the 2nd Armored Division which constituted

the three landing teams were to be loaded at the port of Norfolk, Virginia, except that part of the armored landing team to land at SAFI, Morocco, consisting mainly of 54 medium tanks of the 3rd Bn. 67 Armored Regiment, which was to be loaded at New York, N.Y.

Prior to the actual loading of the designated ships the planning stage was executed by the Staff of the Division at its assembly area at Fort Bragg, N.C. The A. C. of S. G-4 2nd Armored Division, in conjunction with the pertinent General and Special Staff Sections, mainly the A.C. of S. G-3, of the 2nd Armored Division, determined the allocation of personnel, vehicles, and supplies for each ship earmarked to transport elements of the Division. These plans incorporated the debarkation phase and included the desired debarkation priority. The landing teams were formed at Fort Bragg and remained separate units for this entire operation. Selected officers were sent to the Transport Quartermaster School at Norfolk, Virginia to learn the fundamentals of ship loading, especially ship combat loading. Ship combat loading is merely the loading of personnel, vehicles and military impedimenta so that, in accordance with a predetermined tactical debarkation priority, the correct type of personnel, vehicles, and impedimenta is unloaded and put ashore in the correct sequence.

This Transport Quartermaster School was under the Amphibious Force, U.S. Atlantic Fleet, Norfolk, Virginia, and was an excellent school. The greatest detriment was that the prescribed course given the selected TQM's (Transport Quartermasters) of the 2nd Armored Division was only about two weeks in duration, and this alloted time was not

sufficient to produce trained TQM's. The responsibility of a TQM is quite large, especially considering the basic fact that most of the officers selected were 2nd and 1st Lieutenants. A TQM must be a diplomat, improviser, semi-ship's engineer, mess officer, billeting officer, transportation officer, and supply officer, all wrapped in one. Listed below are the major duties of a TQM:

(1) Load the ship.

(2) Act as laison officer with the Navy.

(3) Arrange for ship billeting of army personnel.

(4) Assign and supervise army ship details - cooks, KP's, police, etc.

(5) Tabulate and maintain records for both the loading and unloading.

(6) Inform higher Headquarters of the progress of loading and unloading.

(7) Insure adequate troop supplies required for voyage-rations, water, medical, etc.

(8) Insure laundry facilities, PX, etc.

(9) Unload the ship.

Upon completion of this course the TQM's were returned to Fort Bragg where they were briefed by the A.C. of S G-4, 2nd Armored Division, assigned to ships, received their allocations as to what was to be loaded on their ship and when, and given the desired debarkation priority. TQM's were then sent to their respective ports to board their assigned ships, secure the necessary nautical data to ascertain their loading plans, compile these plans, and await the arrival of the landing teams.

The landing teams at Fort Bragg were given new or combat serviceable equipment and were engaged in landing exercises on a small lake at Fort Bragg. The movement plan involved a rail movement to the ports of embarkation, and this rolling stock was then in the process of arriving at Fort Bragg.

b. New York- The author was assigned as TQM of the U.S.S. LAKEHURST or SEATRAIN as it was commonly referred to at this time. One major factor which was apparent then was the misconception as to the characteristics and capacities of the designated ships, especially the SEA TRAIN. In the latter case the proposed allocation called for some three hundred vehicles, the majority of medium size, the $2\frac{1}{2}$ ton truck type, yet including 54 medium tanks, 6 Carriage Motor M7's and 12 Engineer Bridge trucks (Brockaways). No information was available on the actual capacity of the SEA TRAIN, and on arrival in New York, where the SEA TRAIN was undergoing repairs and passing from Merchant Marine control to Navy control, it was learned that her maximum capacity was approximately 200 vehicles. This decidedly changed the composition of those elements of the landing team designated to embark on this ship and of course changed the tactical aspect of the landing plans. After the actual compilation of the loading plans it was discovered that the SEA TRAIN could only carry approximately 156 vehicles. This again changed the whole set-up; but the vehicles designated for the SEA TRAIN were already moving by rail to this port and it was too late to change the train loads or divert their movement. (See Annex No. 1)

The SEA TRAIN was ready to be loaded on 15 October 1942, and was moored at Brooklyn Port of Embarkation. Naval supplies for the

the SEA TRAIN were then taken aboard and the author took over the job of loading her. On 16 October 1942 th ship was to be loaded with approximately 60 days "B" rations and 5 units of fire for each weapon of the landing team. Due to the peculiar design of the SEA TRAIN it was decided to load rations and gasoline forward on the TANK DECK and ammunition aft on this deck shoring off(1) each to allow for the loading of other supplies. Loading went well until about 3:00 PM this day when a change directed that due to the number of vehicles designated to be embarked the ration supply would be cut to 45 days. This change involved a balanced ration supply for 45 days, thus necessitating the almost complete unloading of the rations, the determination of a balanced "B" ration for 45 days, and the recommencement of the loading. Changes on the amount and type of ammunition also necessitated unloading certain types of ammunition. This materially slowed the loading.

The vehicles had been loaded at Fort Bragg on rail flat cars in predetermined sequence to facilitate the loading on ship, however, due to the switching of the flat cars in the port area this was of no avail. A string of flats was run along the ship's side and then lifted by the ship's 100 ton boom and loaded aboard. Due to the combat loading this involved considerable switching of the flat cars to get the correct vehicles at the ship's side.

All vehicles were waterproofed by Ordnance specialist teams and this phase was accomplished quite efficiently. Delay was encountered on the loading of ammunition, both on the shipment from RARITAN

(1) Marine term meaning to bar off, separate, usually by boards.

Arsenal and in the civilian labor groups loading the ship. In the latter case it was necessary to augment these dock workers with military details to insure completion of the loading on time.

In addition to rations and ammunition, Ordnance, QM, Medical, Engineer, CWS, and Signal Class II and IV supplies were loaded in amounts as predetermined by higher Headquarters, generally 30 days supply for the landing team distributed among the ships of the landing team.

All vehicles to be loaded aboard were fully loaded with their organic basic loads of ammunition, rations, signal equipment and ordnance spare parts. Vehicular gasoline tanks were 90% full.

Due to the large number of vehicles of the landing team shipped to New York, the loading of the vehicles was executed to take the maximum advantage of all available space. The Tank Deck or lower deck was loaded mainly with trucks, 2½ ton and Engineer Bridge Trucks, (Brockways). On top of each of these bridge trucks were loaded two (2) truck, ¼ ton. Trailers were loaded in any available space. Tanks were positioned as close to the vehicle on front as possible taking into consideration the necessary space required to chain vehicles down. The templet-loading of the ship called for the loading of tanks and other heavy vehicles on the superstructure deck--this was done by maneuvering these vehicles on this deck and by using a dock or shore crane. In using this shore crane it was taken into consideration that there would be no such apparatus at the objective and that the ship must be unloaded with its organic booms, one 100 ton boom and two 10 ton booms. The shore crane was used to speed up the loading as the loading of the SEA TRAIN was then one day behind schedule.

In the templet planning and the actual loading the distribution of weight of cargo as affects the ship had to be continually remembered. Due to the basic fact that the SEA TRAIN had more cargo space forward than aft the ship resultantly was "down by the head"(2) when the ship was two-thirds loaded. This was remedied by the ship adjusting its water ballast. Difficulty was encountered in loading heavy vehicles on the superstructure deck due to the construction of the deck, objections by the Navy and the lack of chains for securing the vehicles, however, the use of this deck decidedly increased the number of vehicles in the landing force being transported. After the ship had been loaded there were still some forty vehicles standing on the pier. The adjustment in regards to combat loading priority was computed less these forty vehicles prior to the leading of the ship. These vehicles which could not be taken were shipped by rail to Norfolk, Virginia and later shipped on the D + 20 convoy.

The Moroccan invasion was executed in three main echelons- the D-day on Combat Loaded Convoy; the D + 5, and D + 20 Convoys, which were convoy loaded.

All loading on the SEA TRAIN was completed by 18 October 1942, and the ship left New York on 19 October 1942 for its shakedown cruise and to rendezvous with the main convoy at Norfolk, Virginia.

e. Norfolk- The TQM's loading at Norfolk experienced many of the difficulties encountered at New York. In Norfolk, both APA (personnel)

(2) Nautical term meaning the forward part of the ship, i.e. the bow bow is deeper in the water than the aft part or stern.

and AKA (cargo) ships were loaded by TQM's of the 2d Armored Division and other units of the Task Force. The loading of an AKA ship is considerably different from that of the SEA TRAIN. In the former case the templet system in conjunction with precise measurements was the criterion, while the loading of the SEA TRAIN was similiar to LST loading. The 700' APA and AKA ships carried landing barges on davits; these were used to unload personnel and military equipment to the beaches.

Supplies and material were loaded at Newport News, off Norfolk, using gangs of negro stevedores; they received an exorbitant wage (reported $4.00 per hour) and did not earn it; certain of them, experienced operators of labor-saving equipment, worked rapidly and well; most loafed, asked sailors and soldiers to do their jobs. Actual loading operations consisted of calling on the Port of Embarkation for items, which were stacked on the dock by type and loaded per plan of the ship TQM. The executive officer of the 47th Infantry informed me that supplies were not delivered to the dock sufficiently ahead of time to permit loading prior to embarking the troops; the ships' aide to the executive (aboard LYONS) stated supplies arrived in driblets, the stevedores sitting idle and then unable to pick up a fast tempo; changed cargo necessitated shifting items from hold to hold. Ammunition for ballast was made available in New York; ballast promised by the Navy was late, necessitating a return to port after the shakedown cruise in the Chesapeake. The item of ammunition, which was supposed to be delivered in carload lots <u>per vessel</u>, came in carloads <u>per type</u>, necessitating sorting, shifting and stacking before it could be loaded. Troop trains schedules were jumbled, and coupled with slowness in loading, arrived in port before supplies were loaded; the presence

of troops aboard ship during the loading of supplies was a decided hindrance. Troops first boarded ship per passenger list (alphabetically) then disembarked, formed up in boat teams, and re-embarked. After all ships were loaded a shakedown cruise and landing exercise was held in the Chesapeake Bay. Finally on approximately 22 October 1942 the convoy sailed from Newport News.(3)

3. UNLOADING

a. General - The three sub-task forces executed their landings in their respective areas SAFI, FEDELA, and PORT LYAUTEY on 8 November 1942 with varying degrees of success. Probably the most successful was the landing at SAFI.

b. SAFI

D-day Troops of the assault waves debarked in landing craft; Vehicles were unloaded by LCV's between 0100 Z and 1400 Z; at 1400 Z the SEA TRAIN and TITANIA steamed into the harbor and docked; the remainder of the transports anchored 500 yards off shore, continuing to unload by landing craft. Vehicles, ammunition, gasoline, water and food were unloaded at beaches. (See Annex No. 2)

D+1 day - All types of supplies were unloaded on the two beaches, although vehicles were routed to one beach only. As the beaches became more and more crowded, landing craft entered the Fisherman's Wharf area tieing to the floating pier. By nightfall unloading on both beaches ceased and only limited unloading continued on all docks.

(3) Secret letter, Headquarters Army Ground Forces, Subject: OBSERVER'S REPORT ON LANDING OPERATIONS AT TASK FORCE BLACKSTONE (Major James T. Adams), dated 7 January 1943., p. 5.

D/2 day - All unloading on the beaches ceased and unloading was made to the floating pier in the Fisherman's wharf, the south end of the Phosphate Dock and the angle of the Phosphate Dock and Jettee Transversale from landing craft.

D/3 day - No change.

D/4 day - CALVERT replaced TITANIA at the Jettee Transversale.

D/5 day - LYONS replaced CALVERT at dock; unloading ceased about 1600 Z and convoy sailed about 2000 Z.(4)

The shore parties consisted of two companies of the 540 Engineer Bn. - these troops were not sufficient to handle the large amount of unloading. These troops were nearly all absorbed in running the bulldozers and amphibious tractors. The beaches and quays were continually crowded with landing craft awaiting unloading, waits of four hours in daylight and all night long being common.(5)

The unloading of the SEA TRAIN was commenced about 1500 D-day. The unloading went exceptionally well, due mainly to the training of unloading crews during the voyage; these crews were from the Engineer Bn. of the 2nd Armored Division. Tanks were unloaded at the rate of one every five minutes until the 100 ton boom broke which delayed unloading about three hours. In spite of this accident, all combat vehicles were unloaded within twenty-four hours.

The difficulty of unloading began in the unloading of the supplies, mainly gasoline and ammunition. The major difficulty was the

(4) Secret Letter, Headquarters Army Ground Forces, Subject: OBSERVER'S REPORT ON LANDING OPERATIONS AT TASK FORCE BLACKSTONE (Major James Y. Adams), dated 7 January 1943, p. 6.

(5) Ibid., p. 6.

piling up of the supplies on Phosphate Dock. No army personnel were available to move these supplies further inland; Arabs were used but these natives proved quite unsatisfactory - they were slow, indifferent, and unreliable. Stealing by the natives was quite common and it became necessary to post guards and native overseers over every group. Troops of the 47 Infantry Regiment were pulled out of the line and sent back to the port area to aid in the unloading of the ship. This policy proved unsatisfactory: the men were tired, insulted, (to do what they considered boring and non-infantry labor) and inexperienced. As a result the unloading of the cargo was materially delayed; it took 4 days and nights to unload.

By 1800 Z, D/2, all the combat elements of the 2d Armored Division landing team were ashore, and commenced moving north towards CASABLANCA. It was decided to utilize two destroyers, the COLE and the BERNADOU, loaded with ammunition, fuel and lubricants, and rations as supply carriers. These ships were to proceed to MAZAGAN, when this port was taken, to resupply the landing team to enable the continuance of its mission to CASABLANCA. These two destroyers were moored alongside the SEA TRAIN and were loaded with supplies from the SEA TRAIN. The loading of the two destroyers was made at night while the unloading on the pier continued on the opposite side of the ship. The loads for each destroyer involved definite amounts and types of supplies and this requirement proved extremely difficult to execute due to the bulk loading and shoring-off method which the ship had been loaded. By unloading channels of supplies, employment of double unloading crews,

and vigorous work by all personnel concerned, this loading of the destroyers was accomplished in about six hours. It was necessary then to send experienced unloading crews with these destroyers and these crews came from the SEA TRAIN; this greatly hurt the unloading efficiency of the SEA TRAIN, leaving only a few inexperienced personnel to unload her.

The control on the beaches and the docks was inefficient. Continual minor problems arose by both the Army and Navy and no central control agency was there to solve these problems. The Beachmaster's job was a tremendous one and he had little assistance to enable him to properly execute his responsibilities.

Night unloading was found to be tedious and difficult. It was imperative to have some light in the ship and on the dock in order to expeditiously unload, however, one light led to too many lights and the lights could be seen at far distances. The problem of night unloading at a hostile port was not satisfactorily solved at SAFI--lights must be provided that will enable efficient unloading, yet not be visible for great distances. It must be remembered that as late as D/3 the harbor of SAFI was under direct sniping fire which harassed and often stopped the unloading. Spasmodic enemy air raids interrupted the loading to a limited degree, however, in most cases the enemy planes were over and gone before the personnel unloading the ship even knew there was an air [redacted]. A good air warning system must be provided.

e. [redacted]ELA

This landing was made on the face of determined resistance and under a cross fire from the French Coast Defense installations at Point

Fedala and Fort Blondin. Unsuspected reefs in front of the beaches wrecked many landing craft. The surf rose and made any landing difficult. Inexperienced coxswains allowed many landing craft to beach and be destroyed. Several landing craft lost their way and discharged their passengers at the wrong places. The landing which was designed to cover a front of four miles, with its bulk on a front of two miles, had its extreme flanks landed 42 miles apart. A large percentage of the landing craft made only one trip to the beach and were wrecked.(6)

In view of failure of the ships to maintain their positions on which the employment of boats had been based, the Commanding General of this force directed all combat troops to go ashore in whatever boats were available on the ship on which they were loaded. As a result, combat teams embarked and went ashore more or less in increments.(7)

In the landing many craft were swamped by the swells while the ramps were lowered. The necessity of power-driven ramp equipment is acknowledged. Some of the boats stuck on the beaches could have been saved had tugboats been available. The magnetic compass proved unsatisfactory and gyroscopic compasses, in spite of their cost, appear to be necessary.(8)

The highest casualties of the campaign were from drownings of men loaded with equipment. The individual load was far too great. Leading waves could not carry the load and move rapidly, nor was there any necessity for such loads. Excess equipment was discarded on the

(6) Secret Letter: 319.1/24 (Foreign Obsts)(8) - CINCSI, Hdqrs, AGF Subject, OBSERVER'S REPORT, dated 18 February 1946.

(7) Tactics Department, Fort Knox, Kentucky, U.S. LANDINGS IN MOROCCO, dated April 1943.

(8) Ibid.

beaches and quays along the streets of town and across the hillsides. Approximate loads were as follows:(9)

EM - full field less roll (includes change of socks and underclothes, toilet articles)

1½ days "K" ration

entrenching tool

individual weapon

trench knife

2 - canteens (full)

helmet

ammunition (18 clips M-1, 32 clips 03, 10-20 rd. magazines BAR, 15-30 rds clips T50)

6 - grenades

gas masks

d. Mehdia - Port Lyautey

The landing forces, consisting primarily of the 9 Infantry Division (minus the 47th Infantry Regiment) and a landing team of the 2d Armored Division met determined opposition and it was only after difficulty that this beachhead was secured. From the unloading aspect many of the difficulties encountered at SAFI and FEDALA were confronted here.

One major detriment was that on embarking, it was found that attached units had never received amphibious training and that 10% of the men had not fired the rocket launcher or even the Thompson submachine gun. Many landing craft were lost and due to this, only 11 tanks were ashore by D/1.(10)

(9) Tactics Department, Fort Knox, Kentucky U. S. LANDINGS IN MOROCCO, dated April 1943.

(10) Ibid.

4. RECOMMENDATIONS AND CONCLUSIONS

a. General - Prior to my recommendations and summation of this operation, it must be remembered that this amphibious assault was across the vast distance of the Atlantic Ocean; that inexperienced personnel were being given their batism of fire , and that it was conducted against a country felt to be friendly to the Allied cause though appearing hostile as it was under the relentless influence and pressure of Nazi Germany. No such operation, involving an amphibious attack from one continent to another, had ever before been attempted -- it was a bold and aggressive step--mistakes were inevitable.

b. Recommendations - Enumerated below are recommendations for improvement, as pertains to the combat loading and unloading of an armored division, as a result of the valuable lessons learned on this campaign:

(1) Shore and beach party personnel should be highly trained specialists under one commander. (Army). This training should be continuous.(11)

(2) Boats should be pooled and under centralized control. Control of these boats, especially at night is essential-- all boats should be equiped with TBY radios.(12)

(3) Boat coxswains must be trained personnel -- time is paramount in the initial unloading stages, every minute should be utilized to get more equipment ashore.

(11) Secret Letter, 00299, U.S. Atlantic Fleet, Amphibious Force, Subject: TORCH OPERATION, COMMENTS, AND RECOMMENDATIONS dated 22 December 1942.

(12) Ibid.

(4) All transports should be prepared to load boats at the rail.

(5) An adequate lighting system to permit unloading at night which is not visible to the enemy so as to endanger the the ship, boats, and unloading personnel, should be provided.

(6) A standard rig for boat lines should be used on all transports to facilitate handling boats alongside during darkness.(13)

(7) Loading of all equipment should be in such a manner that a major caliber hit in any part of a ship will not destroy the entire supply of any one item. All stowage should be low and tight, with concentration of weights near the keel, and even distribution of load.(14)

(8) All equipment should be loaded on almost every ship to prevent "putting all the eggs in one basket" and the loss of that item if that ship is sunk.

(9) The installation of a mechanical driven ramp hoist on the LCM(3) is imperative and such a mechanism on the LCV's is highly desireable.(15)

(10) The pneumatic belt type of life jacket should be worn by all troops. The kapok type is unsuitable; it is too bulky.

(13) Secret Letter, 00299, U.S. Atlantic Fleet, Amphibious Force, Subject: TORCH OPERATION, COMMENTS, AND RECOMMENDATIONS dated 22 December 1942.

(14) Ibid.

(15) Ibid.

(11) LCM's, LCP's, and LCV's although generally well designed and capable of giving excellent service, are definitely unsuited for landing through a surf higher than seven feet. In more than one case in this operation when a ramp was lowered the receding seas entered the ramp opening and weighed down the boat, however, expeditious unloading, followed immediately by closing the ramps, would have reduced the number of these casualties.(16)

(12) All troops participating in such an operation must have thorough amphibious training as teams, not individually, prior to such an invasion.

(13) Beaches and docks must be kept clear of supplies in order to unload other supplies. The loss of time by boats standing off awaiting their turn to unload was considerable. All cargo must be moved quickly to less-exposed locations. The huge stocks of supplies on the beaches and docks not only created a bottleneck but a decided hazzard in the event of enemy air operations.

(14) Individual equipment of the assault waves should be limited to the bare essentials required for combat. Other equipment can be moved to these troops after the landing has been effected.

(15) Transportation, especially 2½ ton trucks, must be available in sufficient quantities to clear the beachhead of supplies

(16) Secret Letter, 00299, U.S. Atlantic Fleet, Amphibious Force, Subject: TORCH OPERATION, COMMENTS, AND RECOMMENDATIONS dated 22 December 1942.

and to supply the advance of the exploiting troops on the beachhead, especially in an armored division. The most vulnerable point of armor is its supply lines -- as much consideration must be given to cargo vehicles as combat vehicles.

(16) Transport Quartermasters should be superior officers, thoroughly trained, and preferably either Transportation or Naval personnel, assisted by Transport Quartermasters of the respective units making the landing. The average officer does not know much about the combat loading of ships, nor can he learn this in two weeks. TQM's must be experienced maritime personnel; the responsibility is too great to delegate to officers of combat units, they do not have the necessary qualifications to accept this great responsibility. Such TQM's (Maritime) should remain with that ship and load it, unload it as long as she remains in amphibious operations. It is much easier to teach Transportation or Naval personnel the essential characteristics and requirements of combat units than it is for an army combat officer to learn the characteristics and requirements of efficient loading and unloading of ships.

(17) It is essential that the loading phase be definite and that loading plans be based on full knowledge of the characteristics of the assigned ships. It is imperative that these plans once formed be adhered to as much as possible; changes

result in delay, confusion and inefficient loading. It is also essential that all equipment and supplies be on hand when the actual loading is executed and that all necessary loading preparations have been completed.

e. Conclusions - In summation, the lessons learned from the TORCH operation were not of a novice character, such mistakes were frequent in varying forms before this operation and some are even today prevalent in landing operations. A landing operation, whether over the Atlantic Ocean or a small envelopment along a coastline, present to a great extent the same problems, and such problems are not unique to amphibious operations. These problems can be overcome by thorough and conscientious planning, and efficient and vigorous execution of these plans. An amphibious operation is difficult, control is the criteria, however, the majority of all problems so encountered can be solved long before the first troops hit the beaches--the answer is training and good sound planning coupled with violent application.

SECTION II

SICILY

SECTION II

SICILY

1. GENERAL

The Sicilian invasion, better known then as operation HUSKY, was conducted by the Seventh U.S. Army, under the command of Major General George S. Patton Jr., in conjunction with military forces of the United Kingdom.

The general overall American plan called for three American landings against the southern coast of Sicily in conjunction with an airborne operation. The 45th Infantry Division was to land in the vicinity of Victoria, the 1st Infantry Division to land in the vicinity of Gela, and the 3rd Infantry Division was to land in the vicinity of Licata. In addition to these three amphibious assault forces the 82d Airborne Division was to conduct a vertical envelopment on D-day in the vicinity of Gela, and a floating reserve, consisting mainly of the 2d Armored Division was to be committed at the direction of the CG Seventh U.S. Army to exploit or reinforce any of the three landings.

The 2d Armored Division was split three ways for this operation: CC"A" was attached to the 3rd Infantry Division (Task Force Dime); the 2d Armored Division (minus CC"A" and those units designated to remain in Africa) reinforced mainly by the 18 RCT and the 540th Combat Engineer Battalion, constituted the floating reserve (Task Force Keel); and those units designated to remain in Africa until ordered to Sicily, consisting primarily of two battalions of the 67 Armored Regiment, the 92 Armored Field Artillery Bn., Maintenance, Supply, Medical, and Engineer Battalions minus, and other miscellaneous troops.

2. PREPARATION

In the early part of April 1943 the 2d Armored Division was located in an assembly area at Mcned, north of Rabat, Morocco. During the period 22 April 1943 to 22 May 1943 in a combination rail and motor movement the entire Division moved to an assembly area in the vicinity of Port-Aux-Poules, approximately twenty miles east of Oran, Algeria.

During the period 16 May to 19 June 1943 intensive physical hardening training was conducted which included strenuous exercises, calisthenics, obstacle courses, forced road marches, etc. All guns were test fired and tactical exercises using ball ammunition were executed.

Amphibious training utilizing the facilities of the Fifth Army Invasion Training Center at Arzew, Algeria was conducted. This training included instruction and practical work in waterproofing vehicles, loading various types of craft and ships, and landing exercises.

Difficulty was encountered with unloading LST's and LCT's since the draft of these vessels was not suited to the gradient of the beaches in the vicinity of ARZEW. Considerable lost time resulted while various unloading expedients for unloading LST's, were tried out under the direction of the Navy and the Fifth Army Invasion Training Center. The final solution of unloading LST's was to use LCT's with the sides cut out and transhipping the vehicles; an unsatisfactory solution at the best, slow and laborious in a calm sea, and a most difficult task in the dark or a running sea. No comments were made by Naval personnel regarding the tonnage limitations with respect to the loading of LST's. This weight limitation proved to be a serious problem and a controversial subject in this operation.

A practice landing was conducted 17 June 1943 to 19 June 1943; this was intended to be a full scale rehearsal. Elaborate preparations, such as wire, anti-tank and anti-boat obstacles, controlled troops representing the enemy, flares, blank ammunition etc. were made along the selected beach. Strict secrecy was adhered to until the ships put out to sea. Approximately 50% of the assault troops and 75% of the armored vehicles participated in this exercise. Due to the lack of shipping, this exercise was executed on a relatively small scale, and although it had considerable training benefit to the participating troops, it was of limited value to the Division as a whole.

3. LOADING

a. General

In order to more fully understand the loading of ships and crafts for this operation, enumerated below is the breakdown of the composition of Task Force "KOOL" and those elements of the 2d Armored Division of Task Force DIME:

Task Force KOOL:

18th Inf Reg Combat Team (of 1st Inf. Division)
32 FA Bn.
Co. B 1st Eng. Bn.
Co. B 1st Med. Bn.

Det. 540th Combat Eng. Bn.

2 Plats. Co. "I" 67AR

Combat Command "B" 2d Armored Division
3rd Bn. 67AR(-)
Co. "A" 41 AIB
78 AFA Bn.
Co. "C" 82d Reconnaissance Bn.
Co. "B" 17d Armored Eng. Bn.

82d Reconnaissance Bn. (-3 Recon. Co's)

1st Bn. 41 AIB(-Co.A)

540th Combat Engg. Bn. (-1 Bn) (Reinforced)

107th AA Bn (-)

453rd AA Bn (-)

Det 48th Armored Med. Bn.

Det. 2d Armored Division Maint Bn.

Det. 2d Armored Division Supply Bn.

396th QM Port Bn.

Task Force DIME (2d Armored Division Units)

Hdqrs. Combat Command "A" 2d Armored Division

66 AR

14 AFA Bn.

41st AIB (-1 Bn)

1 Co. 17th Armored Engg. Bn.

1 Co. 82d Reconnaissance Bn.

Det. 2d Armored Division Medical Bn.

Det. 2d Armored Division Maint Bn.

Det. 2d Armored Division Supply Bn.

The general mission assigned NOOL force was to sail with the assault convoy prepared to land in support of any of the assault forces. In order to accomplish this, two general plans were prepared: plan A, land on one or two beaches at which beachheads had already been established, and assemble the command prepared to operate in support of other assault forces as ordered by the Commanding General Seventh Army; plan B, force a landing on one or more designated beaches and operate in support of other assault forces as ordered. In order to

be prepared to execute these plans stated above, KOOL force was grouped in an assault, reserve, beach, and service echelons, and the combat loading of all ships and craft had to be executed so as to positively assure the expeditious execution of either of the two plans.

The mission of the 2d Armored Division elements of force DIME was as directed by the Commanding General of this force, generally, this mission was armored support to effect and exploit a successful landing in the vicinity of LICATA.

The 23 LCT's, 5 LST's, and 7 LCT's of Task Force KOOL, and approximately 20 LST's (2d Armored Division units) of Task Force DIME were anchored in the bay of MOSTAGANEM off ARZEW. The 7 liberty ships EC-2 of Task Force KOOL were at berth in ORAN harbor. Transport Quartermaster were appointed for each ship and craft; all TQM's were under the control of the Division TQM who in turn was a staff officer under the A.C. of S. G-4, 2d Armored Division. The loading of the liberty ships was to be the most difficult; TQM's for these ships were carefully selected.

b. Loading of the Liberty Ships

All TQM's designated for the liberty ships EC-2 worked in a special room of the Headquarters, Mediterranean Base Section (MBS) in Oran. A blueprint diagram of a liberty ship EC-2 was made available by the Transportation Section, MBS. From this scale drawing the essential ships characteristics such as number of holds and decks, capacity of each boom, length, width and height of each hold, dimensions of the Square of the hatches and the various loading obstacles were obtained. It was realized at this time that these

dimensions and marine data were approximate and that no two ships are identical, and that additional installations such as black-out doors, ramps for life rafts, and extra war impediments, were not shown on this blueprint. However, considering the time element, and the fact that three of the selected liberty ships were still on the high seas, and those ships in Oran port were still unloading, it was decided not to have each ship measured by its respective TQM, the standard procedure, but to accept the data of this blueprint for the templet loading plans.

The Engineer Section, MBS reproduced scale drawings of the blueprints and these were distributed to each TQM. These drawings were in three sections: bottom as hold deck, middle or tween deck, and top or superstructure deck. (See Annex Number 2 for approximate dimensions). In so far as could be determined, all obstructions which would interfere with the loading were inserted on these drawings. (See Annex No. 3). Templets to scale were constructed for each type of vehicle that was to be loaded aboard these ships and these templets were reproduced to provide an ample amount for each TQM. Each templet was marked as to what type vehicle it represented.

Each TQM was then given the complete list of vehicles, cargo, and personnel that was to be embarked on his ship and the specified combat loading priority. Due to changes in the tactical aspect of the operation this resultantly necessitated changes in the planned loading of the respective ships. If any one element is detrimental to the efficient planned stowage of ships it is the late changes which cause in the majority of cases an almost complete re-planning of the loading

of the ship; a change or substitution of one type vehicle or cargo can mean the complete change of positions of all the vehicles or cargo on that ship.

The templet stowage in itself is relatively simple--it merely consists of placing the templet drawing of the designated vehicle in a position in the ship where it can be loaded, considering the capacity of the booms, dimensions of the hold, and the desired tactical priority of unloading.

The liberty ship EC-2 was decidedly not a good ship to combat load elements of an armored division; it was not even satisfactory for convoy loading of armor. The number two and number four holds (numbering foreward to aft) are the only holds considering the capacity of the ship's booms which can take vehicles heavier than ten tons. The number two hold usually has a 30 ton boom, the number four hold a 50 ton boom and the other three holds, numbers one, three and five, each have 10 ton booms. This fact is more vividly realized when one takes into consideration the small amount of vehicles in an armored division which weight under ten tons. A loaded 2½ ton truck weighs over ten tons; this only leaves 1/4, 3/4, and 1-1/2 ton trucks and other such vehicles that can be loaded in the number one, three, and five holds. Consequently, the bulk of the vehicles must be loaded in the number two and four holds and their capacity is quite limited, considering the capacity of the LST for heavy vehicles and the LST's relative size to the liberty ship EC-2.

The EC-2, however, was of course not constructed to transport armored divisions for amphibious landings on hostile shores; it was a

cargo ship--a good cargo ship, built quickly by mass production methods and it served efficiently in this role. The EC-2 was much better suited to the 18th RCT of the 1st Infantry Division as its vehicles were for the most part the light type, requiring only a 10 ton boom. In spite of this detriment of the EC-2 it was necessary to load 2½ ton trucks (fully loaded) in the number one, three, and five holds, even though exceeding the rated capacity of the booms. The reasons for this decision were primarily, military necessity and the fact that the rated capacity of booms is usually lower than the actual lifting capacity. No booms broke as a result of this decision either during the loading or the unloading.

The templet stowage of vehicles was completed without incident, however the planning of cargo stowage presented new difficulties. This cargo consisted of all types of supplies -- gasoline, ammunition, rations and Medical, Quartermaster, Ordnance, Chemical Warfare Service, Engineer and Signal Class II and IV supplies. The EC-2's main shaft runs along the Hold deck from the engine room aft, through the number four and five holds. This creates a causeway-like obstacle which hinders vehicular loading. Due to this shaft, vehicles must be positioned on the hold deck by dexterious and vigorous application of guide lines attached to the vehicle and by driving the vehicles to the selected location. It was decided to level off this shaft with cargo to utilize this space for valuable cargo and at the same time build a platform for vehicular loading.

In all the EC-2's the number three hold tween deck had installed approximately three hundred and five tier-type bunks which was reserved for troop space. No cargo or vehicles were loaded in this

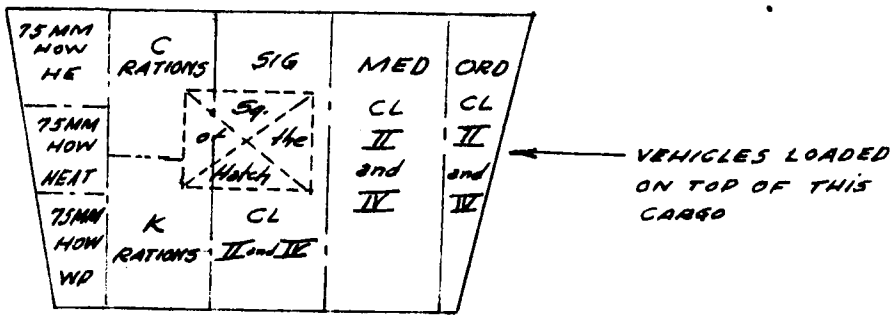
space except personal equipment of the troops being transported by that ship and this equipment was placed on the square of the hatch.

The distribution of cargo among the seven liberty ships was approximately the same in regards to type of cargo to insure supply of that type in the event of ship losses. Due to the fact that task force KOOL was the floating reserve of the HUSKY operation and it was not known exactly how this force was to be employed, the cargo ships played an important part in this role and it was imperative that they be loaded in such a way that if a particular type of supply were required it could be rushed ashore in minimum time. This in brief meant that in addition to the established priority of vehicles for combat loading supplies must be readily available and not buried under a maze of vehicles. This requirement included all types of supplies, and in the case of ammunition it meant type by caliber, by guns, by shell and by fuze - for example, 105 mm Howitzer, M2, HE, M48 fuze.

Since the EC-2 has only five holds and the debarkation priority of vehicles had to remain paramount, this planning requirement involved some difficulty. This problem was solved by first, templet-loading all vehicles off of the square of the hatch in order to be able to reach the Hold deck, if required, where the bulk of all supplies were to be loaded, and secondly, by positioning the vehicles on the Hold deck so as to not materially interfere with the unloading of supplies. With this in view, no great attempt was made to get maximum loading of supplies; the aim was maximum loading yet permitting any type of supply to be unloaded if required. Cargo was loaded in

accordance with the diagram below:

Example:



The number two and four holds contained little cargo as these holds were needed for heavy vehicles. The superstructure deck was used, to some extent, to store small amounts of cargo, that it was known, were to be required early in the debarkation stage. Separate fuses were stored in locked metal containers on the superstructure deck.

In the planning of this loading the distribution of weight with regards to the ship had to be considered, and for the most part gasoline and ammuniton were to be loaded in separate holds. The amounts and types of cargo to be taken were decided by higher headquarters and these amounts were modified somewhat to conform to the actual characteristics of ships. The amounts and types to be allocated to each ship were determined by the Division TQM.

Finally on approximately 21 June 1943 th loading of the liberty ships commenced. Each of the appointed TQM's loaded their respective ships; no other army personnel, except loading crews were permitted aboard these ships. A large vehicle pool was established near the port area where all vehicles earmarked for the EC-2's were waterproofed and inspected. These vehicles were then separated by ship, further

broken down into the hold they were to be loaded and marked with a debarkation priority. The TQM then called by phone to this pool and requested, for example, vehicles number 5 to 15, number two hold, for EC ship number eight (code designation). This system worked exceptionally well, the pool acted as a control point to insure the continuous flow of vehicles and prevented "piling-up" at the docks. For the most part the DUWK's and AA vehicles were loaded on the superstructure deck. Loading continued through the hours of darkness. The loading was completed in about seven days and no difficulty or any magnitude was encountered.

In the foregoing treatise considerable was written on the planning stage and little on the actual loading. This was done because by far the most difficult of any amphibious loading is the planning--if the plans are good plans the loading will be a good loading. Three liberty ships and two APA transports left Oran 5 July 1943 and arrived off GELA 10 July 1943, D-day

e. Loading of the LST's, LCT's and LCI's

The loading of these ships and craft took place during the period 13 June to 5 July 1943 in the bay of Mostaganem off ARZEW. Most of the loading of vehicles was done during daylight hours, however the majority of personnel embarked at night. (See Annex No.4 and No. 5).

The planning and the actual loading of these ships and craft is comparitively easy-again the templet system of fitting scale drawings of vehicles into a scaled drawing of the ship or craft was used. The LCT's carrying only about six vehicles presented no difficulty whatsoever,

and the loading of the LCI's was only personnel embarkation. The loading of the LST's however, often presented minor problems such as racks on the rear of vehicles which had not been considered, and the use of a portion of the tank deck by the Navy for the storing of naval stores, again a factor not previously considered, nevertheless, small adjustments were executed and the loading was successfully accomplished. In spite of the 10-ton capacity of the ship's elevator, loaded half-tracks were loaded on the top deck. The total weight loaded aboard many of the LST's exceeded 700 tons, yet nothing was said of this fact and the affect it would have on beaching the ship. However, when the LST flotilla arrived off TUNIS, the Navy suddenly demanded that the ships be limited to a maximum of 500 tons. This was highly impractical at this time and after considerable controversy the ships were allowed to proceed to Sicily as loaded.

On 24 June 1943 the LST's, LCT's and LCI's sailed from ARZEW, made a rendesvous off TUNIS 27 June 1943, and sailed from the BIZERTE area 8 July 1943.

All plans and orders in connection with this operation were kept in a locked room under guard to which only officers classified for the purpose had access.

4. UNLOADING

On "D" day, 10 July 1943, task force KOOL was directed to disembark at the beaches near GELA, Sicily. At this same time those elements of the Division of Task Force DIME were unloading on the beaches near LICATA, Sicily.

At GELA, on receipt of orders to land, information was received from the Naval Command that LCI's were at that time in cruising formation and

not the planned landing formation. It being impractical to weight anchor, maneuver out to sea, and assume the proper formation, it was decided to disembark the 18 RCT on the LCI's from the cruising formation of the ships and reorganize troops into attack formations on the shore. This situation caused considerable delay.

When orders were received to debark KOOL force, the order included a directive that the Naval Commander would designate suitable beaches in the GELA area. Certain 1st Infantry Division beaches were indicated as satisfactory and upon receipt of this information command reconnaissance parties were immediately sent ashore to make arrangements for assembly areas, routes from the beaches, and the necessary guides. Later, information was received from the Navy that the beaches given as satisfactory were suitable only for certain types of craft and that the bulk of the force would land at different beaches. This change was transmitted by radio to the KOOL commander ashore who made the necessary readjustments, however, debarkation was delayed some two hours by this change.

Battalion commanders were then assembled on the KOOL flagship and issued the debarkation orders. The 1st Bn 41 AIB and the 18th RCT were unloaded prior to daylight on D/1. A few scattered detachments landed on the wrong beaches.

Several instances occurred which materially delayed the landing: small craft were not manned by sufficiently trained or responsible personnel. Numerous examples were noted where boats failed to come alongside in response of orders, land as directed, or return to the proper ship for reloading. There was a decided lack of central control for these small craft. The plan for debarkation of troops and vehicles contemplated the transfer of vehicle crews from troop ships to the EC-2's at

sea, to permit landing vehicles with their complete crew. The EC-2's arrived almost a day behind the troop ships and as a result vehicles and crews landed separately which complicated assembly ashore. Landing operations were difficult due to the high surf that was running and the almost continuous enemy action by long range artillery fire and enemy air activity.

By dark on 11 July 1943 all tanks of the 3rd Bn 67AR, 8 tanks of the 82 Reconnaissance Bn, and the bulk of the vehicles of the 78 AFA Bn. were ashore. During this day the beachhead was counter-attacked by elements of the enemy Hermann Goering Panzer Regiment. Throughout the day several enemy bombing and strafing attacks were directed at the ships lying off GELA beaches. Several ships and craft were damaged and one LST and one liberty ship EC-2 (ROBERT ROWEN) received direct hits and burned. The loss of these ships was a severe blow as only a few DUKWS had been unloaded, all other vehicles and cargo were lost.

One big problem in this operation was the clearing of the beaches. Supplies of all types were unloaded all along the various beaches; it took the combined efforts of all the beach groups to clear these beaches and move these supplies to inland dumps. In this task, over the soft sands of GELA beaches the so-called "DUCK" or truck, 2½ ton (DUKWS), amphibious, made its outstanding debut. This vehicle was one of the major factors for the success of this operation -- it was invaluable. The operators of these vehicles were not well trained, however, they did aid materially in the unloading.

The LST's were unloaded by the utilization of Navy pontoons which formed causeways from the ramp of the LST then ran about three hundred

feet onto the beach. Many LST's used the LCT with the sides cut out in order to expedite the unloading. This latter method however is slow and laborious. One important detriment in the unloading of the LST's was the considerable loss of time consumed by the LST's in jockying into position at the head of the pontoons.

The unloading of the EC-2's was done by unloading at sea into small boats, LCT's, and "Ducks". The major delay was awaiting the return of these craft and the monotonous time spent in positioning them along side the ship under the proper boom. This unloading was too slow, the major cause was lack of centralized control of the ferrying craft; the operators of these craft were not dependable, they more or less picked out the ship they wished to unload. By approximately D/4 all vehicles of the Division and attached troops were ashore; supplies took until about D/10 to be completely unloaded. As soon as the vehicles were unloaded from the EC-2's, the control of these ships passed to Seventh Army.

The landing at LICATA was similar in regards to unloading difficulties as for GELA. Here enemy air activity destoryed one LST of the Division.

One important point that developed in the latter action of the campaign was the lack of cargo trucks. This factor, as in Morocco, proved that in any amphibious action involving an armored division, considerable priority must be given to cargo vehicles, especially the 2½ ton truck.

5. RECOMMENDATIONS AND CONCLUSIONS

a. Recommendations

The major recommendations in respect to the loading and unloading aspects of this operation are as follows:

(1) The liberty ship ECG is not suited for combat loading of armor.

(2) A definite system of centralized control for boats and crafts must be established and adhered to.

(3) Boats and craft must be provided with an adequate system of communication.

(4) Beaches must be cleared early, control in regards to what type of supplies to be landed at designated beaches must be thoroughly planned.

(5) Operators of small boats and "DUCKS" must be well trained.

(6) All transports and liberty ships should have permanent naval or merchant marine personnel to function as TQM's assisted by Army personnel. The usual line officers are not capable TQM's nor can they assimilate the necessary technical knowledge in a short period.

(7) Definite regulations as to the maximum weight limitations aboard LST's must be specified in the planning stage.

(8) There is a great need for a rapid and simple method of unloading the LST's if the ship cannot beach herself.

(9) The LST is slow and should be improved upon in regards to living conditions for military personnel.

(10) Vehicle crews and vehicles should never be separated.

b. Conclusions

In conclusion, the overall results of the Sicilian campaign were a decided improvement over the African landings, yet many of the mistakes made in Africa were repeated in Sicily. It cannot be overemphasized that control is the keynote of success in amphibious landing

and that three-fourths of an amphibious operation can be successfully assured by correct and conscienous planning and thorough and detailed training, especially joint Army-Navy - Air Training.

SECTION III

NORMANDY

SECTION III

NORMANDY

1. GENERAL

In the invasion of France through Normandy, known then as Operation NEPTUNE, the role of the 2d Armored Division was the exploitation of the established beachhead; the Division was a part of the "Follow-up" units of this gigantic undertaking.

This treatise will cover that phase of the operation that pertained to the combat loading and unloading of the 2d Armored Division.

2. PREPARATION

In late November 1943 the 2d Armored Division departed from PALERMO, Sicily and moved to the UNITED KINGDOM disembarking at the ports of LIVERPOOL, England and GLASGOW, Scotland, then moving to an assembly area at TIDWORTH, England. This water movement was merely an administrative move; all vehicles remained in Sicily; new vehicles awaited the Division at TIDWORTH, England.

During the period December 1943 to May 1944 the Division engaged in vigorous training of all types in preparation for the coming invasion. In May 1944 elements of the Division participated in operation FABIUS, a landing exercise conducted by First U.S. Army off the southern English coast. This exercise had considerable training value, however the majority of the personnel involved did not actually participate in the landing maneuvers.

3. LOADING

On the 6-7 June 1944 the Division (less the rear echelon) moved to the marshalling areas in the vicinity of SOUTHAMPTON - PORTSMOUTH, and

WEYMOUTH, England. The Division, minus Combat Command "A" assembled in the SOUTHAMPTON area while Combat Command "A" assembled in the WEYMOUTH area. Composition of these elements was as follows:

2d Armored Division:

Combat Command "A"

Hdqrs CC"A"
66 AR
14 AFA Bn.
41 AIB (-)
Co. "A", 17th Armored Engineer Bn.
Co. "A", 48th Armored Medical Bn.
Co. "A" Maintenance Bn.
Det. Co. "B" Supply Bn.

Combat Command "B"

Hdqrs CC"B"
67th AR
78th AFA Bn.
1st Bn. 41st AIB
Co."B", 17th Armored Engineer Bn.
Co."B", 48th Armored Medical Bn.
Co. "B", Maintenance Bn.
Det. Co. "A" Supply Bn.

Division Control

Headquarters Co., 2d Armored Division
Headquarters Division Artillery
142d Armored Signal Co.
MP Platoon, Service Co.
195 AAA (AW) Bn. (SP)
702 TD Bn. (SP)
Det. D-9 Co. "B", 6901 ECAD
Det. F-165 Sig. Photo Co.
1 Plat. 608th QMCo.
Maint, Medical, Engineer and Supply Bn's (-)
92 AFA Bn. (-)
82 Recon. Bn.

Two Division TQM's were appointed and reported to their respective leading areas about one month in advance of the Division. There these TQM's worked directly with SECTOR to insure correct planning of stowage in accordance with the Division's plan.

The overall functioning of the Marshalling Area Headquarters, Sector Headquarters, and MOVCO and NUCO is rather complex; it is not the purpose herein to describe this system, however, see Annex No. 6 for a cursory explanation of the command and movement channels.

The Transportation Section of SECTOR actually was responsible for the pre-stowage plans of all units embarking at that port. The Division TQM actually templet loaded his own ships and craft at SOUTHAMPTON in conjunction with the requirements of SECTOR. This proved highly advantageous in regards to the allocation of units to ships and craft, especially from a tactical aspect. Although SECTOR was furnished with complete loading plans from BUCC, which in turn received the plans from the combat units, frequent changes in regards to the type and number of vehicles, proved that a TQM permanently functioning at SECTOR was quite beneficial, especially when considering the channels involved to make changes.

One major principle involved in this operation was that for the first time the Division did not have to completely embark themselves; here Transportation Corps, and allied Services of Supply took over this function. This was somewhat new to the 2d Armored Division which was quite accustomed to doing it themselves.

Templet stowage plans were completed about 1 June 1944 and on 6-7 June 1944 the Division moved to its respective marshalling areas. The Marshalling Area Headquarters and SECTOR then took over the reigns of loading and moved units of the Division to the "hards" (docks) and proceeded to load the Division in accordance with the templet plans.

No major difficulty was encountered in loading the LST's and LCT's of the Division. Minor difficulties such as racks on vehicles, unknown obstructions, necessitated minor revisions in the overall plan. A clean-up pool was established for any vehicles which could not be loaded on their

designated ship or craft due to unforseen eventualities; these vehicles were shipped across very soon after the Division sailed.

Even though the Division was part of the "follow-up" phase of this operation, all vehicles were still waterproofed and were combat loaded. This of course was done to insure the landing in any circumstance.

The forward elements of the Division sailed on D/3 or 9 June 1944; the bulk of the Division departed from the loading areas on D/4 or 10 June 1944.

4. UNLOADING

The Division landed on OMAHA beach east of CARENTAN, France. By the time the Division landed (D/4, D/5, D/6) this beachhead was a well-established and organized locality. Landing was relatively easy: the LST's and LCT's beached themselves at high tide, waiting until low tide then unloaded their contents. In most cases vehicles drove onto dry sand, in others, it was necessary to go through a small amount of water. No difficulty of any magnitude was experienced.

Vehicles quickly were routed to de-waterproofing areas where all vehicles were made ready for combat, then they moved to an assembly area in the vicinity of the CHRISY FOREST. The whole Division was closed in this area by 16 June 1944.

5. RECOMMENDATIONS AND CONCLUSIONS:

a. General

The vastness of this operation and the fact that the combat loading and unloading involved the overall operation prohibits the author from making any recommendations of vital content. In brief,

the Division's role was a small one in a large undertaking, consequently, the recommendations and conclusions will be similarly limited.

b. Recommendations:

(1) That a Division TQM be present with SECTOR Headquarters during the templet loading.

(2) That a more centralized control of units in the Marshalling Areas be given the Division Commander.

(3) The units be thoroughly trained in the loading and unloading of LST's prior to any operation.

(4) That some system of control be furnished the Division Commander while at sea in order to insure his complete knowledge of the whereabouts of any of the ships or craft transporting his units.

(5) That a more adequate system of guides be established to insure rapid assembly of units in the de-waterproofing assembly areas.

(6) That all personnel charged with the templet loading of units be extremely-well trained personnel.

c. Conclusions

The summation of this operation can be stated as quite successful, especially when considering the Sicilian and Moroccan campaigns, yet the operations are quite different, especially in scope.

Here as in the former amphibious operations control is the criterion--this is mandatory. All personnel must be thoroughly trained in the loading and unloading of ships and craft, especially drivers. Constant laison must be maintained with the Service Troops charged with

the leading, preferably by an officer of the Division Staff (A.C. of G-4 Section) who is thoroughly familiar with amphibious operations and the tactical plan of the Division Commander. In brief, the success of such an endeavor can be assured before the ships and craft leave their ports of embarkation -- this assurance is accomplished by meticulous planning and thorough training to develop teamwork.

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