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ACTION REPORT
WESTERN NAVAL TASK FORCE
THE SICILIAN CAMPAIGN

OPERATION "HUSKY"
JULY - AUGUST, 1943

Vice Admiral H. K. HEWITT, U. S. NAVY,
Naval Commander, Western Task Force.

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TABLE OF CONTENTS

Part I	— INTRODUCTION	1
Part II	— NARRATIVE OF EVENTS	2 — 15
Part III	— THE PLAN	16 — 30
Section I	— PLANNING	16
Section II	— THE PLAN	19
Part IV	— EXECUTION OF THE PLAN	31 — 94
Section I	— REHEARSALS	31
Section II	— CONVOYS and ROUTING	31
Section III	— APPROACH	35
Section IV	— BEACON SUBMARINES	37
Section V	— THE LANDING	38
Section VI	— D-DAY: H-HOUR: SURPRISE	42
Section VII	— CONTROL VESSELS	45
Section VIII	— TRANSPORTS	47
Section IX	— LANDING CRAFT	50
Section X	— SHORE PARTY	54
Section XI	— BEACH PARTY	58
Section XII	— SMOKE	62
Section XIII	— BARRAGE BALLOONS	62
Section XIV	— OPENING OF PORTS	65
Section XV	— PORT SECURITY and COMBAT INTELLIGENCE	66
Section XVI	— MAINTENANCE and BUILD UP	66
Section XVII	— REDUCTION OF THE ISLAND	72
Section XVIII	— DIVERSIONS and DEMONSTRATIONS	79
Section XIX	— OPERATIONS OF PT BOATS	80
Section XX	— ENEMY NAVAL LOSSES	81
Section XXI	— BEACH INTELLIGENCE	81
Section XXII	— AERIAL PHOTOGRAPHS	81
Section XXIII	— CHART-MAPS	81
Section XXIV	— SCOUT BOATS	82
Section XXV	— SCOUTS and THE LOCATING OF BEACHES	82
Section XXVI	— UNDERWATER and BEACH OBSTACLES	82
Section XXVII	— HYDROGRAPHIC RECONNAISSANCE OF BEACHES	83
Section XXVIII	— AEROLOGY	83
Section XXIX	— PRISONERS OF WAR	84
Section XXX	— MINE SWEEPING	85
Section XXXI	— MINE LAYING	85
Section XXXII	— NAVAL GUNFIRE	86
Section XXXIII	— AA DEFENSE and AIRCRAFT RECOG- NITION	88
Section XXXIV	— ENEMY AIR ACTIVITIES	89
Section XXXV	— JOINT AIR PLAN	89
Section XXXVI	— FIGHTER COVER and AIR SUPPORT	91
Section XXXVII	— FIGHTER DIRECTOR CONTROL	92
Section XXXVIII	— SPOTTING PLANES	93
Section XXXIX	— NAVAL AIR LIAISON OFFICERS	93
Section XL	— STAFF ORGANIZATION and OPERATION	93
Section XLI	— PRESS RELATIONS	94

Part V	— MATERIAL AND LOGISTICS	95 — 101
Section I	— PLANNING, PREPARATION and TRAINING PERIOD	95
Section II	— REPAIR FACILITIES, DRY-DOCKS and PETROLEUM INSTALLATIONS IN SICILY	96
Section III	— EXPERIMENTAL and DEVELOPMENT WORK UNDERTAKEN TO OVERCOME PROBLEMS and CONDITIONS ARISING DURING THE PLANNING PERIOD	96
Section IV	— LOSSES, DAMAGE INCURRED, RELIABILITY OF SHIPS and CRAFT, and RECOMMENDED ALTERATIONS	97
Section V	— SALVAGE and FIRE FIGHTING	100
Section VI	— UNLOADING OF SHIPS and CRAFT	101
Part VI	— MEDICAL	102 — 104
Section I	— GENERAL	102
Section II	— BEACH BATTALIONS	102
Section III	— EVACUATION SHIPS	103
Section IV	— HOSPITAL FACILITIES	104
Section V	— U. S. NAVY CASUALTIES	104
Part VII	— COMMUNICATIONS	105 — 116
Section I	— GENERAL	105
Section II	— PLANNING	105
Section III	— COVER PLAN	106
Section IV	— "HEADQUARTERS" SHIPS	106
Section V	— DEFICIENCIES	107
Section VI	— CALL SIGNS	109
Section VII	— AUTHENTICATION	110
Section VIII	— CRYPTOGRAPHIC AIDS	110
Section IX	— VOICE CODES	111
Section X	— SPECIAL CODES	111
Section XI	— RADIO CHANNELS	112
Section XII	— VISUAL	112
Section XIII	— NAN EQUIPMENT	113
Section XIV	— RADAR and IFF	113
Section XV	— COUNTER MEASURES	114
Section XVI	— RADIO EQUIPMENT	114
Section XVII	— CONCLUSION	115
Part VIII	— CONCLUSIONS	117 — 127
ENCLOSURE (A)	SICILY — BEACH DATA	
ENCLOSURE (B)	ASSAULT TRANSPORT ROUTES	
ENCLOSURE (C)	ASSAULT TRANSPORT ROUTES	
ENCLOSURE (D)	ASSAULT ROUTES	
ENCLOSURE (E)	ATTACK FORCES	
ENCLOSURE (F)	ARMY ATTACK PLAN (Diagrammatic)	
ENCLOSURE (G)	GUNFIRE SUPPORT AREAS	
ENCLOSURE (H)	MINEFIELDS AND ANCHORAGE	
ENCLOSURE (I)	RETURN ROUTES	
ENCLOSURE (J)	NORTH COAST OPERATIONS	

PART I

THE INTRODUCTION

The most gigantic fleet in the world's history was assembled to launch the Allied invasion of Sicily. Over 3,200 ships, craft, and boats made up the Allied naval forces, of which more than 1,700 comprised the Western Naval Task Force.

2. This enormous armada was assembled in the Mediterranean from remote regions, and was here organized and brought to readiness for battle. Ships and craft were altered or modernized with special equipment and devices, and training was conducted to ensure that each group of the vast forces would execute its assignment as required by the detailed naval plans. In this manner the Sicilian campaign was originated, planned, organized and forces trained in the five months since the Anfa Conference at Casablanca.

3. The Western Naval Task Force, under my command, had the task of training, embarking, transporting, protecting and landing the American invasion troops in Sicily; of supporting the military operations by naval combatant forces; and of ensuring the rapid, orderly flow of logistic maintenance to the military forces throughout the campaign.

4. The Allied naval forces in the Mediterranean were so deployed as to gain the ascendancy over enemy submarines, and to bring to action and destroy any enemy forces which threatened the vast convoy movements engaged in the invasion.

5. The amphibious assaults were uniformly successful. The only serious threat was an enemy counter-attack on D plus one day against the 1st Infantry Division when a German tank force drove across the Gela plain to within one thousand yards of the DIME beaches. The destruction of this armored force by naval gunfire delivered by U. S. cruisers and destroyers, and the recovery of the situation through naval support, was one of the most noteworthy events of the operations. The continued employment of naval gunfire against enemy positions on the north coast during the reduction of the island phase of the campaign, the unique employment of landing craft in providing a service of supply of food, fuel and munitions to our front line troops on the north coast, and the skillful execution of flanking amphibious landings on the north coast contributed to a marked degree in the rapid defeat of the enemy.

6. The brilliant achievements of the Allied forces in this conquest, launched on a magnitude which heretofore had never been attempted, were due principally to the singleness of purpose which all forces demonstrated. The appreciation of each others' problems produced an inter-service spirit of co-operation and common endeavor which welded the naval and military forces into a single team possessed with the resolute will to win.

7. The huge task of assembling, training, and supporting large and complex forces, including green personnel and hundreds of craft of types yet untried in combat, entailed tremendous labor. The large scale planning involved in the assembly of forces and material, and in the proper employment thereof in detailed plans merits the highest admiration.

8. Such shortcomings and deficiencies as were noted are attributed principally to hurried preparations, the non-arrival of material in the theater, and to insufficient training. The ability of gun crews to quickly adjust themselves to battle conditions was notable. The courage and bravery displayed in action by the Allied forces left nothing to be desired. In combat our soldiers, seamen and aviators demonstrated tenacity, endurance and efficiency equal to or superior to that possessed by the enemy.

PART II
NARRATIVE OF EVENTS.

July 6th, 1943.

D-4 Day.

- 1700 MONROVIA (FF) weighed anchor.
- 1739 DIME Attack Force formed up.

July 7th, 1943.

D-3 Day.

- 1200 DIME Attack Force and MONROVIA (FF) position Lat. 37° 10' 02" N., Long. 06° 23' 00" E.
- 1330 Second Section of DIME (NCF-1) sighted astern.
- 1800 British convoy KMF-18 sighted to Northward proceeding on converging course at slightly greater speed. The convoy drew ahead and entered Tunisian War Channel ahead.
- 2000 Position on MONROVIA (FF) Lat. 37° 15' 40" N., Long. 07° 48' 45" E.

July 8th, 1943.

D-2 Day.

- 0800 MONROVIA (FF) position Lat. 37° 11' 02" N., Long. 10° 42' 00" E.
- 0940 MONROVIA (FF) passed Cape Bon.
- 1200 MONROVIA (FF) position Lat. 36° 39' 05" N., Long. 11° 05' 07" E., course 210°, speed 12.7 knots. (Average speed for 264 miles — 11 knots.) Zig-zag Plan No. 10.
- 2155 MURPHY made SS contact and attacked.
- 2208 Explosion suggests probability of successful U-boat attack.

July 9th, 1943.

D-1 Day.

- 0800 MONROVIA (FF) position Lat. 33° 52' N., Long. 13° 34' E., speed 14 knots, zig-zag Plan No. 10. Wind and sea changed to westward and increased to Force 3.
- 1100 BOISE, SAVANNAH, BROOKLYN, and BIRMINGHAM joining formation. Wind and sea making up. Wind recorded as Force 4/5. CTF 86 reported difficulties with LCT stragglers.
- 1600 Wind recorded as Force 6.
- 1630 Gozo (Malta) sighted by MONROVIA.
- 1645 Wind is judged to be Force 6/7. Wind force has set LST and LCI(L)'s to Southward and Eastward. LCT's slowed considerably.
- 1932 CTF 86 authorizes expenditure of up to 80% of ammunition on railway batteries located on the mole at Licata. JOSS sweepers directed to cancel sweeping operations until daylight of D-Day.
- 1940 BIRMINGHAM & BROOKLYN, with escorts, joined JOSS formation and were directed to steer directly for submarine reference vessel at 6½ knots made good.
- 2220 JOSS sighted flares, gun and bomb flashes from beach on starboard bow.
- 2230 Wind lessened to approximately Force 4.
- 2235 CENT Force sighted flashes, fires and flares toward beaches.
- 2257 CENT Attack Force turned off to approach transport area.
- 2300 AA fire, flares and fires on beach, as a result of bombing attack, sighted by all Attack Forces. Licata, Gela and Scoglitti afire, great amount of AA clearly visible.
- 2308 SAMUEL CHASE (FF of DIME Attack Force) reports sighting light from beacon SS, HMS SHAKESPEARE.

- 2316 Commander CENT Attack Force reports sighting SS beacon, HMS SERAPH. Searchlights off beaches observed. Air beacon ashore sighted.
- 2325 JOSS reported sighting Queen reference light.
- 2337 JOSS reported sighting Charlie reference light. Speed decreased.
- 2359 CTF 86 released Gaffi and Molla Attack Groups and directed them to proceed to their assigned transport areas.

July 10th, 1943.

D Day.

- 0040 Western Task Force arrived at assigned areas. Searchlights from shore occasionally seek out our movements but apparently without success. Increased AA and flares noted from shore. ANCON (FF CENT Attack Force) anchored.
- 0044 Moonset.
DIME Force in position in transport and gunfire support areas. JOSS Force sighted Blue reference vessel light.
- 0050 All Attack Forces adjusting positions. JOSS Force sighted Yellow reference vessel light.
- 0100 Sea gone down, wind now recorded at Force 3/4.
- 0115 JOSS LST's began lowering landing craft.
- 0142 CTF 86, in BISCAYNE, anchored midway between Blue and Yellow reference vessels and about 2½ miles off beach, Licata bearing 127°.
- 0155 BISCAYNE illuminated by 3 searchlights from shore.
- 0204 JOSS Attack Groups anchoring. Reported as being too far out, requiring longer run for LCVP's. First waves left rendezvous area for JOSS Blue Beach.
- 0215 First wave from DIME Attack Force (Ranger Battalion) leaves for the beach. JOSS LST's arriving late.
- 0239 CTF 85 reports his H-hour will be delayed one hour at request of Commander Transports.
- 0243 NCWTF orders CTF 85 to land as soon as possible.
- 0245 H-Hour. MG and medium artillery fired from beaches as first waves landed. Support craft fired rockets at batteries. DD's fired at searchlights. Enemy air force mobile beacon near Scoglitti still operated for their own returning aircraft. Coastal towns silhouetted by fires proved considerable aids to navigation. Ranger Battalion and first waves of First Inf. Div. landed by CTF 81. CTF 86 landed first waves. Surf reported as 3 ft. high.
- 0246 CTF 85 directed H-Hour postponed to 0345. PHILADELPHIA ordered to shoot out air beacon at that time.
- 0250 CTF 86 reported 5 searchlights illuminating BISCAYNE and other vessels and beaches. No fire was noted from beaches however.
- 0255 SWANSON & ROE damaged in collision in the JOSS Attack area, requested permission to proceed Malta.
- 0300 SAVANNAH & BOISE firing at shore batteries and searchlights.
- 0315 First waves of LCVP's landed on JOSS Blue Beach.
- 0330 CENT DD's bombarded beaches. Support boats opened rocket barrage.
- 0335 All TF 81's initial landing completed.
- 0343 BUCK ordered to replace SWANSON & ROE IN JOSS Fire Support Area No. 1 and support troops landing at Red Beach.
- 0345 CENT Attack Force landings begun.
- 0354 First boat waves of CTF 85 landed at assigned beaches encountering no opposition.
- 0400 First light. SAVANNAH & BOISE opened fire on prearranged targets. CTF 85 ordered HMS ABERCROMBIE to lie off transport area until dawn. CTF 86 reported continuous artillery and MG fire on JOSS Red Beaches and approaches.
- 0424 ME 109's, JU 88's and Italian Fighter-Bombers dropping flares and attacking CENT Attack Force Area. 11 enemy dive-bombers attacking PHILADELPHIA & JEFFERSON. Cruisers launched spotting planes. SAVANNAH & SHUBRICK engaged and silenced several enemy batteries.

- 0433 Air attack now over JOSS area as well as CENT.
- 0440 All Attack Forces report successful landings.
Beaches and landing craft strafed by enemy fighter-bombers and JU 88's.
Severe gunfire reported on JOSS Red Beach.
- 0448 Gen. Middleton (C. G. 45th Inf. Div.) reports "Elements from all assault battalions of CENT Force have landed. Everything appears to be going well".
- 0450 SENTINEL damaged by bomb hit during dive-bombing attack in JOSS area.
- 0455 All initial CENT landings completed, generally unopposed due to effect of preliminary shore bombardment.
- 0458 MADDOX hit and sunk by bomb in DIME area.
- 0501 Our fighters engaging enemy air units over CENT.
- 0510 DIME Force reports all initial landings successful against light opposition, with exception of Yellow Beach.
SENTINEL received several near misses from repeated bombing attacks on JOSS area.
JOSS Red Beach Beachmaster cautioned CTF 86 not to land LCT's due to severe shell fire in that sector.
- 0512 SWANSON in southern part of JOSS area attacked by a ME 110 but destroyed the plane by her AA at 2000 yds.
JOSS' shipping area bombed by enemy aircraft.
- 0515 Spitfire fighter cover arrived.
- 0520 Our fighters and cruiser spotting planes shot at by our own AA. Enemy air attack on JOSS beaches. JOSS Fire Support Group completed prearranged firing at selected targets.
- 0535 Shore batteries opened fire on BISCAYNE in JOSS area. Fire returned by BISCAYNE on town of Licata. LCT's enroute to Red Beach are held up by CTF 86 until reduction of enemy gunfire.
- 0600 Unloading shuttle service in CENT started.
DIME's sweepers commenced sweeping inside the 10 fathom curve.
- 0630 C. G. 3rd Inf. Div. reports from JOSS area progress satisfactory on Blue Beach, more landings underway at Green Beach, two battalions already ashore on Red Beach.
LCT's enroute from JOSS area delayed by weather, expected in CENT and DIME areas shortly.
Transdiv 7 moved in to new anchorage 5000 yards off CENT beaches.
- 0641 BUCK ordered to execute rapid fire on specified target until further notice. USS SAVANNAH & SHUBRICK ordered to destroy enemy shore battery in DIME area which has just opened fire.
BROOKLYN & BOISE in JOSS area, commenced firing in effort to neutralize artillery fire on Red Beaches, mortar fire now falling in that sector.
- 0700 DIME situation report is that 16th RCT has reached its phase line and 1st Inf. Div. Command Post established. No opposition since 0400 except that met by the 26th RCT. No word from Ranger Battalion since landing and moving inland.
DIME Transports began moving in toward beach.
Landing craft going in on DIME Red 2 and Green 2 beaches. DUKW's being dispatched. CTF 81 sweeping inshore preparatory to moving transports in closer to his relatively secure beaches.
BROOKLYN & BOISE, together with HMS LCG(4), firing on artillery near JOSS Red Beach, succeeded in silencing all enemy fire in that sector. LCT's directed to land regardless of cost.
- 0710 Enemy batteries shelling DIME beaches near Gela with accuracy; Blue Beach is mined and some casualties have occurred there. LST's in JOSS area moving inshore under cover of smoke screen.
Intermittent fire by cruisers and destroyers on shore defenses.
- 0732 HMS ABERCROMBIE began firing on CENT inland targets.
- 0742 Trans div 5 moved in to 5000 yds. off CENT beaches. WOOLSEY & NICHOLSON laid smoke screen on JOSS Red Beach.
- 0800 BROOKLYN ordered to fire on medium range targets in JOSS area for 10 minutes.

BOISE's scouting plane reports enemy activity near their target.
 Fire is intensified. BUCK assigned new enemy gun emplacement as target.
 HOPI (Salvage) and 4 satellite YT's report to CTF 81 for duty.
 JOSS Red Beach cleared of enemy fire. Opened for landings.

0826 C. G. 45th Inf. Div. goes ashore as all his landings in the CENT area are successful.
 BOISE & JEFFERS took advancing German tanks under fire in DIME area.
 SHUBRICK takes another tank column in the same area under fire.

0840 Enemy shelling of town and pier at Licata makes JOSS landings there difficult. All other
 landings in that sector satisfactory, resistance being overcome and objectives taken.

0900 Enemy tanks are spotted in DIME area heading in general direction of Gela.

0919 DIME reports situation at Yellow and Blue beaches as very bad due to enemy land mines.
 Casualties being evacuated to transports by ship's boats. Traffic in this area to be sent
 to Red 2 beach until others are cleared.

0940 BOISE & SAVANNAH ordered to seek out and silence enemy artillery which is accur-
 ately shelling DIME Red 2 Beach.

0945 NCWTF orders that disposition of cruiser spotting planes be reported in advance so that
 our fighters can give them protection against anticipated enemy air attacks.

1000 CENT Yellow Beach reported unsatisfactory.

1005 NCWTF orders BOISE to keep advancing enemy tanks under fire as they are presenting
 a threat to our Gela beachhead. CTF 86 is asked if he can spare a cruiser from JOSS area
 to reinforce BOISE in DIME.

1010 Enemy artillery fire on DIME Red 2 Beach too accurate and craft are temporarily diverted
 from landing there. Stores piled on the beaches are being hit as well as craft.

1020 The transports ORIZABA and CHATEAU THIERRY, together with the craft of the
 KOOL Attack Force, are ordered closer in shore to anchorage near DIME transports.

1030 DIME's Red 2 Beach again opened for landing craft. Blue Beach still being cleared of
 mines.
 Eleven LCT's from CTF 86 report to CTF 81 for duty.
 The number of enemy tanks (now believed to be part of the Hermann Goering Panzer
 Division) advancing in Gela area is believed to be 30.
 ComTransDiv 7 directed to proceed to CENT beaches to accelerate salvage of beached
 boats.

1035 CTF 85 offered ABERCROMBIE to CTF 81.

1050 The SENTINEL, hit more than 5 hours ago, goes down.
 CinCMed advised all commands that 150 troop-carrying aircraft would be over JOSS area
 between 2200 & 2230.

1100 Gen. Truscott, C. G. 3rd. Inf. Div. (plus Rangers) in the JOSS area reports "30th infan-
 try secured Poggio di Lango at 0636 and Gallodoro shortly after. The 15th Inf. hold the
 area NE of Licata. The 'Green Force' hold Castle Aqua while the 7th Inf. positions are
 uncertain. Unloading proceeding satisfactorily."
 Shelling of DIME's Gela and Red 2 Beach has started again while cruisers proceed to
 locate the source.

1125 All CENT beaches satisfactory except Yellow.

1150 Gen. Truscott adds to his report by stating that our forces established four beachheads
 and moved into the outskirts of Licata within 3 hours. The town is virtually taken and
 all operations are going "magnificently" despite delays due to the sea-storm on the
 approach last night. "Shooting honors", he says, "go to the Navy's cruiser which des-
 troyed remaining enemy batteries." Air Cover was tops and casualties light.

1155 Gen. Bradley, C. G. of the II Corps in the CENT area, reports operations "proceeding ac-
 cording to plan" although he has received no further word regarding the Parachute
 troops or Rangers since initial landings.

1212 DIME's Blue and Yellow beaches now cleared of mines and reported ready to accept craft
 and vehicles.

1259 West gate of Licata harbor now open.

1320 JOSS Beaches being strafed by ME 109's. Little damage. Planes also strafed CENT &
 DIME beaches.

- 1325 CTF 86 urgently requests fighter cover as enemy bombers and fighter bombers are again over JOSS area.
- 1335 It is reported that three of our cruiser's SOC spotting planes have already been shot down.
Enemy air attack on JOSS shipping and beaches.
- 1350 Army Intelligence reports large enemy MT convoy moving southeast from Piesi at 0730 this morning while 3 smaller columns moving south from Barra Franca.
Unloading of transports is slowing down.
- 1415 Scoglitti, the central target of the CENT assault, was occupied by our forces.
"Hit-and-run" raids by FW 190's and ME 109's continued sporadically on all beaches.
Spitfire, coming in on a forced landing near CENT area, was accidentally shot down in flames by LST.
- 1430 The 1st Inf. Div. in DIME's Gela area was still encountering difficulties and the KOOL Attack Force was ordered to land on DIME beaches and to remain as Army reserve force. NCWTF warned Flagships and cruisers that our fighter protection is primarily for shipping and beaches. If spotting planes wish to avail themselves of this protection, their flights must conform to fighter schedules, arranged through NCWTF Flagship. Reasonable protection can be afforded within 5 miles of our own area or coast line.
Enemy dive-bombers raid DIME beaches.
- 1530 CinCMed arrives in area and exchanges signals with NCWTF.
CinCMed advises of successful landings of British in the East and congratulates NCWTF on "competing so successfully with weather and other difficulties". NCWTF reports need for all practicable air support.
- 1535 CTF 85 reported situation as of 1450; Scoglitti taken. Our forces were 2 kilometers West of Vittori at 1215. There is heavy fighting where the railway and Comiso road come together. CG 45th Inf. Div. is taking energetic measures to determine situation and whereabouts of certain units not heard from since landing. Casualties have been generally light in personnel and equipment. 45th Inf. Div. expects to reach planned line by dark. Two spotting planes have been shot down. The bulk of his troops and equipment are unloaded. CG II Corps reports situation, and adds that quality of enemy coastal defense troops is poor.
- 1547 High level bombing attack on CENT & DIME transport areas.
- 1605 Town of Licata, in JOSS area, is captured. Our tanks in that area are ashore and moving north. JOSS forces all proceeding well. CENT forces, encountering more difficulties, also doing well.
- 1632 HMS PRINCE CHARLES & PRINCE LEOPOLD having unloaded all personnel, were detached and proceeded to Malta.
DIME Forces still having most trouble due to strong enemy tank, artillery, and air attacks.
- 1700 KOOL Force commenced to land on Gela beaches.
- 1753 CTF 85 ordered Transdiv 3 proceed toward assigned anchorages off Scoglitti and abandon their assault beaches. New beaches lie 2000 yds. northwest of Scoglitti.
- 1800 NCWTF orders CL's and DD's to remain underway during the night as protective screen for transports against enemy air, surface or submarine attacks. LCT's are ordered to debark troops from the transports ORIZABA and CHATEAU THIERRY, as soon as possible.
- 1810 Enemy air attack on JOSS Blue Beach.
- 1815 CTF 81 advises that only Red 2 Beach in DIME is really suitable for LST and reemphasizes need for additional fighter cover. More mines are discovered on Blue and Yellow beaches and they are closed again.
- 1835 DIME beaches and transports attacked by enemy bombers. LST 313 hit and afire. LST 312 damaged. McLANAHAN shot down one enemy plane.
- 1845 Army requested Navy provide transportation for 2500 Prisoners-of-War to North Africa.
- 1900 CTF 81 reported slowness of unloading largely due to shore parties not working efficiently.

- 1930 CG 1st. Inf. Div. reports being subjected to 2 hours continuous dive bombing and requests more fighter cover. LST in DIME gets direct hit from "hit and run" raider and is burning. NCWTF directed CTF 86 to send as many LCM's and LCT's as were available from JOSS to assist in landing at DIME and CENT beaches.
- 2130 Additional fighter cover was recommended for all beaches at first light. JOSS turn-around convoys started as Port Licata was rendered operational.
- 2135 CTF 86 reported that all but one beach and one pontoon causeway were operative, despite difficulties of enemy air attacks and exposure to choppy seas.
- 2145 NCWTF orders all available craft to continue unloading of ships at maximum speed all through the night.
- 2150 Combatant ships intensify efforts to neutralize enemy counter attacks near Gela which are driving our troops back toward the beaches.
- 2215 CG 1st Inf. Div. requests reinforcement of tanks. This should be supplied by reserves landing as KOOL forces.
- 2225 CENT shipping undergoing enemy air raid. One pontoon causeway was reported at JOSS newly-improved Yellow beach.
- 2245 Enemy Raiders bombing DIME transport area.
- 2252 Enemy aircraft attacking JOSS shipping.
- 2300 LST receives direct hit from divebomber in JOSS area. CTF 85 reports that surf and wind have caused considerable damage to LCVP's in CENT area.
- 2350 Tank reinforcements from KOOL not yet ashore in force and CG 1st. Inf. Div. signals again urgently. CTF 85 orders debarkation of all heavy guns and ammunition on the South end of CENT Yellow Beach.

July 11th, 1943.

D + 1 Day.

- 0128 BIRMINGHAM directed to furnish fire support at daylight for Army reconnaissance West of Licata. AFHQ Malta reports air cover for July 11 same as for July 10. CTF 85 directed transports concentrate on unloading in order to be completed by sunset of 12th. Further ordered prospective minefield area swept for enemy mines.
- 0245 NCWTF congratulated LCT's and urged increased effort to unload transports before expected rough weather returns tomorrow.
- 0300 45th Inf. Div. troops are reported to be a mile from Vittoria and will attack Comiso airport this morning.
- 0500 CTF 81 ordered change in fire support DD's. The SHUBRICK is relieved by the BUTLER and the JEFFERS by the GLENNON.
- 0506 CENT transport area bombed in enemy air attack.
- 0530 BIDDLE collided with LST 382—Minor damage.
- 0554 CENT beaches congested and lack of vehicles to remove stores reported.
- 0635 DIME transport area attacked by about 12 dive-bombers and fighter-bombers. Near miss on MONROVIA (FF). The transport BARNETT hit; forward magazine flooded; fire in No. 1 hold under control. The transport ORIZABA is also damaged. She suffers 6 holes above water line, electric and gyro cables leading to the bridge are cut. The transport DICKMAN also slightly damaged by near miss.
- 0645 Enemy air raiders past. CTF 81 orders all ships to stand-by to get underway as new attack appears to be developing.
- 0730 Eight formations of 6 planes each were plotted as heading towards DIME. JOSS Yellow Beach was bombed by 3 aircraft. No damage. NCWTF directed CTF 86 to send all available LCT's to land KOOL Force at DIME.
- 0735 Fighter cover arrived and dispersed enemy attackers over JOSS after quick bombing and strafing raid on beaches completed.
- 0810 JOSS shipping again being raided by 6 aircraft. LST 158 received a direct hit and is burning.
- 0820 SAVANNAH reported loss of all its spotting planes.

- 0833 Convoy NCS-1 consisting of 7 Liberty Ships, Minediv 50, Desron 7 (less MAYO) stood into DIME area.
- 0913 Licata and adjacent beaches in JOSS area bombed by enemy aircraft. Little damage.
- 0915 CTF 81 reported his resources for reenforcing Shore Party exhausted. Suggested alternative is withdrawal of soldiers from front to assist in unloading. Cruisers and DD's cruise close inshore in Gela area firing salvos into enemy positions.
- 0937 CinCMed orders Operation "FRACTURE", the diversionary raid, advanced twenty-four hours to tonight, 12th. Minor alterations added; Force "H" is to supplement the demonstration.
- 1012 Enemy artillery and tanks commenced firing on transports, Liberty ships and beaches. Fire support ships took enemy tanks and guns under fire and silenced them.
- 1055 Salvage ships report salvage operations impossible on DIME beaches due to enemy's fire.
- 1135 NSWTF embarked in STEADY to visit JOSS area.
- 1140 ABERCROMBIE made available by CTF 85 to CTF 81 for bombardment of Gela sector with 15" guns.
Defensive minefield seaward of DIME area was being laid as planned.
- 1200 At CinCMed's request, NCETF sends AA cruiser, HMS COLOMBO, to NCWTF to reinforce AA protection of anchorage.
- 1204 JOSS beaches strafed by enemy aircraft.
- 1225 NCWTF arrived JOSS area as it received new "hit and run" bombing raid.
- 1228 30 enemy tanks advancing in valley back of Gela. Warships again called on by Army to render gunfire support.
- 1245 NCWTF went aboard USS BISCAYNE in JOSS Attack Force Area to confer with CTF 86.
- 1321 NCWTF ordered sailing of CTG 80.5, ORIZABA, CHATEAU THIERRY, and escorts to Bizerte in accordance with plan. Escorts to return immediately. JOSS reported force as now being about 75% unloaded. More sneak air raids are made on all beaches at periodic intervals.
- 1400 Loaded boats being turned away from CENT beaches because of congestion and lack of personnel to unload boats.
- 1415 AFHQ advises that all available air assistance is being given even to extent of drawing cover from other sectors. Raiders bombing DIME shipping. Stuka dive-bombers on JOSS Red Beach.
- 1422 Raiders over CENT transport area.
- 1445 NCWTF returned to STEADY and proceeded down coast, past DIME, towards CENT area.
- 1500 NCWTF signals "Well Done" to CTG 80.5 for his good work in laying anti-submarine minefield.
- 1510 SAVANNAH requested CTF 81 notify all ships that our own tanks are now engaged in battle and care should be taken to distinguish friend from enemy.
- 1535 Approximately 18 twin-engined enemy bombers attack DIME transport area. Some pass on to JOSS area. Little damage.
- 1545 CTG 80.4 reported inability due to weather to operate as originally planned on the left flank of assault, requested permission to operate tonight (this suggests CinCMed's orders for "FRACTURE" not received.)
- 1546 DIME area attacked by approximately 16 FW 200 and Heinkel 111 bombers and 6 to 8 fighters. Fighters in low, strafing beaches, bombers made high-level attack on shipping. Several fires started on beaches. ROBERT ROWAN, a Liberty ship loaded with ammunition, is hit and is afire. Several near misses on other vessels. One aircraft believed shot down.
- 1550 Salvage group ordered to assist ROBERT ROWAN.
- 1555 Comiso airport in CENT area is reported captured by our forces.
- 1600 SAMUEL CHASE (FF of DIME Attack Force) reported antenna is shot away. Radio transmission will be delayed half-hour.
- 1603 17 hostile aircraft plotted as shipping in JOSS area is bombed. ROBERT ROWAN is abandoning ship.
- 1628 All vessels adjacent to ROBERT ROWAN ordered to stand clear.

- 1630 NCWTF goes aboard ANCON (FF of CENT Attack Force). More enemy bombing raids over DIME and JOSS areas. No serious damage.
Command CENT transports directed to site all pontoon causeways at newly marked CENT beaches 2000 yds. NW of Scoglitti and unload remaining LST's there.
- 1652 Boats now landing at CENT beaches without trouble but delayed by shortage of Shore Party personnel to handle cargo.
- 1700 ROBERT ROWAN blows up; flames visible for miles.
- 1721 13 enemy tanks headed towards Gela beach.
McLANAHAN attempted to sink ROBERT ROWAN by gunfire in order to extinguish flames.
- 1739 LAUB reported 4 tanks destroyed in CENT area by naval gunfire.
- 1830 NCWTF returned aboard MONROVIA.
- 1850 Our paratroops broadcast their position on captured German transmitter. They are well inland, have 200 prisoners and await orders.
- 1915 CTF 85 reports Ragusa airfield has fallen to us. Seven of CENT transports should be unloaded by midnight. Supplies moving across beaches, and inland to 45th Inf. Div. near Vittoria. CTF 85 advised C. G. 11 Corps that boats were held up at beaches due to lack of unloading personnel. Boats were being told to wait off beaches 3 hours.
- 1940 CTF 81 reports positions of our troops in Gela sector. He expects all but three of his transports and cargo vessels to be ready to sail for Africa tomorrow. Strafing and "intruder" air attacks have continued all day. ROBERT ROWAN in too shallow waters to sink; this fire proves to be brilliant beacon to attacking aircraft.
NCWTF orders CTG 80.4 (Diversion Group) not to deviate from CinCMed's plan.
Malta advised NCWTF that fighters will patrol areas through the night.
- 2000 ME 109's attacked CENT shipping. COWIE advised bombs dropped.
- 2130 Enemy submarine contacted on East flank of CENT Force. Screening group dealing with it.
- 2155 Approximately 15 enemy aircraft attacked DIME Attack Force transport area; they dropped flares and bombs but no hits recorded. Several near-misses. Enemy also attacked convoy from JOSS just after departure from Licata for Bizerte. No hits.
- 2205 JOSS shipping being bombed by enemy aircraft. Flares also dropped. No hits. Some near misses. Four bombs straddle BIRMINGHAM; one lands close aboard BROOKLYN.
- 2216 DIME area again attacked by aircraft dropping flares and bombs. ROBERT ROWAN still burning brightly.
Torpedo planes reported attacking on West flank. MURPHY and McLANAHAN report near misses but no damage.
- 2220 New air attack developing but is dispersed by arrival of night fighters.
- 2230 Gela airfield reported as ready for use. Licata to be ready by dawn.
- 2234 Air raid over all transport areas. Flares and bombs dropped. No damage.
- 2250 CENT transport area attacked but enemy aircraft driven off by night fighters. JOSS AA fire breaks up attempt to attack shipping in that area.
- 2300 SS reported at 2130 attacked and damaged by British MTB.
Attempts to lay smoke screen in order to remove glare on transports from blazing ROBERT ROWAN ineffectual due to wind conditions.
- 2310 Artillery batteries in CENT area opened fire; "hit-and-run" air attack made direct hit on CENT beach starting large fire. Attack developing in force. One enemy plane shot down.
- 2330 Our night fighters again overhead to disperse threatening attack.
NCWTF orders transport areas swept tomorrow for mines possibly dropped by planes during night.
All ships were reminded of recognition signals to be shown by our troop transport planes tonight.
- 2335 CTF 85 reported 2 hostile planes shot down in his area three miles off Scoglitti. Planes over DIME area.
- 2345 Reports arrived of our airborne troops landing in JOSS and CENT areas. One of our aircraft is down in JOSS area.
Number of unidentified bombers headed towards CENT.

CG 3rd Inf. Div. requested CTF 86 provide cruiser and 2 DD's for fire support at daylight, 12th July, on town of Agrigento and road to Palma de Montechiaro.

CG 1st Inf. Div. reported bombing of DIME area. Damage heavy and costly. More fighter protection needed. RAF reports night fighters turned back at least 3 attacks in Western Attack Force area.

CTF 85 cancelled departure of CENT transports this evening.

NCWTF directed CTF 85 to transfer 20 LCM's with crews and spare parts to CTF 81. Craft are to be used to assist DIME unloading, then transferred to JOSS.

Two hostile planes shot down in CENT area during air raid.

July 12th, 1943.

D + 2 Day.

- 0042 CTF 81 reported that all but 10% of his unloading was completed and that, despite as much as three hours delay in unloading boats on the beaches, seven transports will be ready to sail tonight, the 12th.
- 0146 The Army reported that of the 50 tanks attacking the DIME and KOOL Forces around Gela, 13 were destroyed during the day. The remainder withdrew at 2235 last night.
- 0347 Admiralty advises that at 1840, on the 11th, German aircraft were informed in plain language that Gela was occupied by German troops.
Gen. Truscott, in the JOSS area, advised that the situation is considered so satisfactory there that he is able to send assistance to DIME if required.
- 0300 HMS PRINCESS CHARLOTTE and PRINCESS ASTRID, with Army personnel aboard, stood into DIME area.
- 0431 NCWTF advised all ships that almost continual fighter air cover will be available today over CENT and DIME.
- 0511 Repeated warnings not to fire on friendly planes overhead are sent by NCWTF.
- 0526 CENT transports reported unloading progressing very slowly.
- 0618 Gen. Eisenhower, aboard HMS PETARD, arrived in the Attack area.
- 0630 Gen. Eisenhower came aboard MONROVIA and was greeted by NCWTF.
- 0715 Gen. Eisenhower left MONROVIA to go ashore.
- 0747 Dispatch received reveals 24 of our own troop transport planes shot down during last night. The majority are said to have been brought down by our own and Army AA guns ashore.
- 0755 Gen. Eisenhower left the Western Task Force area.
- 0845 1st Inf. Div. captured Ponte Olivo airfield.
- 0915 HERNDON relieved GLENNON as fire support DD in DIME Fire Support Area 2. DIME LST's, with escorts, sailed for Bizerte.
CENT reported unloading completely blocked by failure to clear beaches and unload boats. Only 4 CENT transports unloaded.
- 1000 HMS COLOMBO, AA cruiser, reported to NCWTF and is directed to anchor off Gela mole and provide AA protection.
- 1150 Chief of Combined Operations (Vice Admiral Mountbatten) arrived aboard ANCON from HMS LAMERTON for conference with NCWTF.
Enemy division reported by reconnaissance as moving south.
- 1253 A signal from CTF 85 to CTF 86—"Accordance verbal instructions yesterday of NCWTF I am unloading combat loaders with LST, LCI(L) and LCT(5)'s. This will delay use of my craft for shuttle convoy. pontoons being shifted to new beaches 1 mile north of Scoglitti at request of CG II Corps."
- 1300 CTG 80.4 reported that signal from CinCmed regarding "FRACTURE" not received in time. Diversion Group operated independently in another area and request permission execute TG 80.4 part of "FRACTURE" tonight.
Situation ashore infinitely better today. Our forces now moving forward on all fronts and enemy's counter attacks near Gela frustrated.
DIME transports completed unloading.
- 1400 CTF 86 received direction proceed to Gela and assume general charge of DIME and CENT, as well as JOSS, activities.

- 1404 Chief of Combined Operations left MONROVIA.
- 1530 NCWTF ordered execution of his Operation Plan No. 3 providing for return of transports. HMS ABERCROMBIE remaining in assault area to aid cruisers and DD's in gunfire support.
- 1545 HMS PRINCESS CHARLOTTE and PRINCESS ASTRID cleared DIME area after round trip to Africa day ahead of schedule. Permission is requested for them to proceed to JOSS to locate some missing British landing craft.
- 1555 CTF 86 in BISCAYNE anchored off Gela to assume charge of all Naval Attack Force areas.
- 1600 NCWTF notified all commands that he is sailing his Flagship, MONROVIA, with the transports tonight in order to eliminate as many vulnerable targets from area as possible. He is shifting his Flag to McLANAHAN. Operational control will continue through his staff on board Flagship until return to Algiers, then at AFHQ.
- 1601 CTF 85 advised all commands that he is sailing his flagship, ANCON, with transport convoys tonight. He is shifting his Flag to EARLE. TF 85 Administrative continues from ANCON, which returns to Oran. First section of CENT transports completed unloading.
- 1605 Additional British and U. S. LCT's arrived in area and report for duty.
- 1700 NCWTF went aboard BISCAYNE for conference.
CG 7th Army goes ashore to establish his Command Post.
- 1730 Flag of NCWTF broken in McLANAHAN.
- 1735 CL's and DD's continue intermittent bombardment of DIME area targets. "Hit and run" enemy air raids, causing little damage, continue as before.
- 1745 One enemy aircraft brought down over CENT area.
- 1811 MONROVIA, ANCON, SAMUEL CHASE and transports of DIME and CENT Attack Force areas weigh anchor and form up convoy for return.
SAVANNAH, BOISE and destroyer division 34 were assigned, under CTF 86, as Fire Support ships. ABERCROMBIE and COLOMBO also reported to CTF 86, now tactically commanding whole area. Targets were now well inland, in the vicinity of NISCEMI and BUTERA.
- 2000 Returning CENT and DIME convoys formed up. Only remaining ships, aside from combatant ships, are large and small landing craft. Follow-up convoys proceeding according to plan. CinCMed reported diversionary demonstration by large units off Favignana Island and Marsala was successfully executed.

July 13th, 1943.

D+3 Day.

- 0836 NCWTF advised all commands that he is proceeding to Malta. ComCruDiv 8 (Admiral Davidson) remains as S. O. P. A. CTF 86 to remain to take charge of landing areas, operations of ships and craft as contemplated by plan. HMS ABERCROMBIE and COLOMBO to remain in DIME area in support until no longer needed. CruDiv 13 to remain in JOSS area to furnish gunfire support as long as required, returning to Algiers for fuel and ammunition as required.
CTF 86 ordered "prompt and thorough program of boat overhaul" as early as possible, also ordered a detailed report of conditions of vessels made to him.
- 1000 ComCruDiv 13 requested air cover for BROOKLYN.
- 1012 NCWTF signaled to ComCruDiv 8 that left flank of gunfire support ships should be withdrawn to Gela area during the night to afford them better protection. Fighter cover for detached units has been requested for today.
- 1500 NCWTF arrived in Malta aboard McLANAHAN.
- 1600 Army Air Force stated its directive restricts its limits to the areas off DIME, CENT and JOSS Beaches. CTF 86 requests that suitable modifications of directive be made.
- 1700 All remaining ships of TF 85 reported completely unloaded. Convoy formed and ordered to sail to ORAN.

July 14th, 1943.

D+4 Day.

- 0515 USS BROOKLYN was damaged by mines while patrolling Southward and Westward off Licata.
- 0700 CTF 85 in EARLE departed CENT area for Malta.
All AM's, YMS, PC's, SC's, AT's, LST's, LCI(L)'s, LCT(5)'s of TF 85 ordered to report CTF 86 for duty.
- 0930 HMS COLOMBO and USS GHERARDI were detached from Gela area. Cruisers and DD's still firing occasional salvos at maximum range.
- 1113 MTBron 15 and TG 80.7 were ordered to operate against enemy shipping in the West Sicilian area, including Palermo.
- 1500 NCWTF left Malta aboard McLANAHAN for Bizerte.
BROOKLYN, BOISE and SAVANNAH with escorts, ordered to Algiers.
CTG 80.2 (Escort Group) placed under CTF 86. CG 3rd Inf. Div. requested CTF 86 for cruiser gunfire support on Agrigento for 0600 tomorrow, July 15th.
- 1600 All commands advised of flights of airborne troops in transports and gliders. Courses, times, altitudes and speeds are given.
CTG 80.4 requests permission to continue diversionary operations under tactical command of CTF 86.
Signal from NCWTF to WNTF—"Due to careful planning, excellent seamanship, gunnery, and engineering, and a high standard of proficiency and devotion to duty by all hands, the most difficult and complicated task of landing our troops on hostile shores has been successfully accomplished. Informed reports of especially meritorious acts and accomplishments have been many. I consider that all, from the Task Force commanders to the lowest ratings, have performed splendidly and are deserving of the highest praise. Well done. It is now our duty to support, maintain, and build up the forces which have been landed. Carry on."
NCWTF arrived in Bizerte, returning by air to Algiers. McLANAHAN returns with convoy to report to CTF 86 for further assignment. CinCMed orders as many landing ship and craft as possible withdrawn from "Ferry Service" to Sicily as they are wanted for reconditioning and training for prospective operations in the immediate future. Meanwhile transports, merchant vessels and remaining landing ships and craft will carry the weight of the "follow-up."

July 15th, 1943.

D + 5 Day.

- 0600 PHILADELPHIA, BIRMINGHAM and HMS ABERCROMBIE bombarded Porto Empedocle and Agrigento in support of 3rd Infantry Division. USS STAFF, Minesweeper, hit a mine while maneuvering to avoid enemy air action. A Liberty Ship is reported hit.

July 16th, 1943.

D+6 Day.

CTF 86 recommended to NCWTF that routes for troop-carrying aircraft be modified. Present routing, he feels, endangers planes and reduces effectiveness of AA defenses. PHILADELPHIA and BIRMINGHAM patrolled off Empedocle but no enemy within range. Empedocle was given an ultimatum to surrender.

July 17th, 1943.

D+7 Day.

Excerpt of a message to Gen. Eisenhower from Prime Minister Winston Churchill—"further congratulations on the unfolding success of the Sicilian Campaign. I should be grateful if you would give my compliments to Admiral Hewitt. The weather gave occasion, according to reports made by the Admiralty, for a magnificent display of American seamanship."
BOISE and SAVANNAH ordered to report to ComCruDiv 8 in DIME area; PHILADELPHIA and BIRMINGHAM to be relieved.
Air action during the day slackened considerably.
CTF 86 released British LCG's and LCF's for overhaul, repairs and training.

July 18th, 1943.

D + 8 Day.

BIRMINGHAM is to remain in combat area in support of Army ground forces until she is relieved.

HMS ABERCROMBIE and COLOMBO ordered to continue duties under CTF 86.

Porto Empedocle now opened.

Boundaries assigned to NCWTF are abolished by CinCMed who reassumed control of the area. The day's dispatches dealt exclusively with convoy movements, supplies, embarkation of casualties, and prisoners.

July 19th, 1943.

D + 9 Day.

Organization of "follow-up" convoys occupying greatest Naval attention. The number of craft provided are in excess of what was planned, and ships are turning around faster than anticipated.

July 20th and 21st, 1943.

D + 10 and 11 Day.

Air activity over sea areas was negligible. BROOKLYN returned to combat area; BIRMINGHAM and CHICOPEE were ordered to the United States, while BOISE and SAVANNAH, together with HMS ABERCROMBIE, are to remain in support of the 7th Army. A request by the Army for the 6" cruisers to engage enemy coast artillery (believed to be 12" guns) was denied.

Many stranded landing craft were reported on the assault beaches.

Confusion over sailing orders resulted in several ships arriving at incorrect destinations.

Malta announced a new approach channel to the southward and information has been disseminated regarding enemy mine fields, demolition plans, codes and call signs.

CTF 86 prepared to turn over his command to Capt. Doughty, Commander, Advanced Bases, and return to Bizerte.

July 22nd to 24th, 1943.

D + 12 to 14 Day.

Palermo fell to our forces on the morning of the 22nd.

CTG 80.4 ordered to cease all deceptive and diversionary operations.

MTBron 15 (PT boats) sank enemy cargo-transport and small tug while patrolling off western entrance to the Straits of Messina.

July 25th, 1943.

D + 15 Day.

MUSSOLINI RESIGNS.

CG 7th Army proposes to NCWTF the execution of a series of amphibious landings in the rear of enemy positions, along the Sicilian north coast. Naval Gunfire Support to be supplied by CL's and DD's. Operation to be mounted from Palermo.

MTBron 15, during patrol off Italian coast, engaged F-lighters, 2 of the enemy believed sunk.

All other naval activities of routine nature dealing with problems of supply and maintenance.

July 26th, 1943.

D + 16 Day.

0926 Palermo bombed in 40-minute attack by enemy aircraft; MAYRANT badly damaged by near misses.

July 27th, 1943.

D+17 Day.

Com 8th Fleet concurred in suggested "leap-frog" landings and assigned ComCruDiv 8 to command TG 88, comprising SAVANNAH, PHILADELPHIA, escorting DD's and a large group of landing craft (the latter assigned by CTF 86), which is to execute the assaults. MTBron 15 also assigned to the force to support and screen operations.

July 28th, 1943.

D+18 Day.

Palermo harbor was opening up. The congestion of wrecked vessels blocking the port was being eased.

MTBron 15 engaged enemy shipping off NE coast of Sicily. Hits were noted but further results not known.

July 29th, 1943.

D+19 Day.

CinCMed ordered all submarines to withdraw from areas north of Sicily. The Messina Straits are to be patrolled henceforth by surface forces.

Palermo successfully proceeding with local repair work on the MAYRANT. Sweeping operations and the work of dragging the harbor for obstructions continues with considerable speed.

MTB's again engage enemy E-boats and F-lighters. Many hits scored but no sinkings claimed.

Convoys arrived and departed according to planned schedules.

July 30th and 31st, 1943.

D+20 and 21 Day.

Naval forces continued to support Army movements by intensive gunfire along the North Sicilian coast. St. Stefano was a particular target in aid of the 45th Inf. Div. Plans were laid for bombardment of railway bridge over the Oliva River and of the harbor of Vibo Valentia.

The PHILADELPHIA was subjected to two air attacks while on patrol but suffered no damage.

August 1st to 14th, 1943.

D+22 to 36 Day.

Palermo again bombed on August 1st by enemy aircraft.

August 3rd: BUCK, while escorting 6 Liberty Ships, attacked and sank an enemy submarine.

Demonstration Group, returned to operations, was ordered to cease operations.

PLUNKETT was ordered to receive the surrender of the Island of Ustica.

August 4th: Palermo again attacked by 3 squadrons of enemy planes. SHUBRICK was damaged and suffered casualties of 2 killed and 15 wounded. The MAYRANT was again damaged. One LST was sunk.

PHILADELPHIA and SAVANNAH had begun, in concert with DD's, a series of night and day bombardments of enemy positions behind the front lines. Offensive sweeps by night by DD's, MTB's and PT's were also begun.

August 5th: Catania surrendered to the British.

August 6th: Palermo once more attacked in force but little damage resulted. The attack was broken up by our night fighters; 5 enemy E-boats were dispersed by the DD patrol outside the harbor.

August 8th: the first "leap-frog" amphibious landing behind enemy lines was executed by CTF 88 in the vicinity of Terranova. The landing was made with little opposition and no loss to the Navy except 1 LCVP. It resulted in a break in the enemy line and the capture of 1200 prisoners and much equipment.

During the day naval guns from the PHILADELPHIA and SAVANNAH continued to hit road and railway objectives with marked effect.

August 9-10: Failure to indentify each other quickly enough brought about the opening of fire of the BENSON on the BRANT.

A PC and SC collided while on patrol.

August 10: Palermo harbor clearance progressing but it is estimated that it will be month yet before the port can be satisfactorily opened to any but small craft as there are at least 27 sunken ships blocking the channel.

The SAVANNAH states that operations are being handicapped and endangered by lack of adequate air coverage.

August 11th: The second amphibious attack was launched at 0300 today behind the enemy lines 2 miles East of Cape Orlando. Again little opposition was encountered and the operation was instrumental in breaking strong enemy defense lines along the ridge from Cape Orlando to Naso. This was to be the last stand of any strength made by the enemy prior to complete evacuation.

August 12th: Axis evacuation on increasing scale via Messina begun.

Shortage of LCT's and Lighters caused a reduction in the delivery of Air Force bombs. PT's and MTB's operated with increasing aggressiveness in and near the Straits of Messina.

August 12th and 14th: TF 88 continued to operate LCT's for ferrying of Army artillery and heavy equipment around mined and/or blocked coastal highways. Except when used for amphibious assaults these craft have been in continuous service.

August 16th: The plan for the third amphibious "leap-frog" landing was abandoned as the advance had now become so rapid it was found to be unnecessary. Instead an RCT was brought up and landed behind our own lines at Talcone.

DD's and PT's (of MTBron 15) continued their effensive sweeps East of Milazzo to the mainland. Numerous successful contacts are made with enemy light craft over a period of several days (for details see "Operations of PT Boats").

August 17th: Messina is occupied. Operation "HUSKY" is formally concluded.

PART III
THE PLAN

Section I — PLANNING.

1. "Since the forces must be drawn from both ends of the Mediterranean and from outside, planning will be extremely complicated" (Extract from the introduction to the Joint Planning Staff's Appreciation of operation HUSKY, January 10, 1943).

2. This forecast was extremely accurate.

3. The painstaking planning preparatory to the invasion of Sicily paid ample dividends. The enormous task of formulating detailed plans to achieve the assembly and movement under perfect timing of huge naval forces to the combat area required staff work of the highest order. The fidelity with which the plans were executed indicates the perfection attained by the planning staff officers.

4. A detailed analysis of the problems, difficulties and omissions of planning, however, bring to light many points which should be corrected in the interest of continued success in future campaigns and operations. Such campaigns and operations will find us pitted against a more proficient and determined enemy schooled in counter methods designed to frustrate amphibious landings on his shores. Such enemy methods will surely include the adoption of new weapons to render ineffective our current offensive efforts. Hence the skill and military advancement of a cunning enemy imposes upon the Allied Nations the necessity of new developments in materiel, adequate training of our forces, and the creation of suitable and correct plans for their employment. Only by such progress can the future success of our amphibious operations be guaranteed.

Command

5. My directive for the conduct of this operation was identical with that issued to the Commanding General 7th Army, insofar as command relations were concerned. These directives established unity of command under the tenets of Paragraph 10, FTP 155, Joint Action of the Army and Navy, 1935. Under the naval directive the Naval Commander was "in command of the Western Task Force from the time it has entered this area until the army is firmly established ashore." The command area referred to was specified in the directive and was defined by latitudes and longitudes in order to prevent interferences in movement between allied naval forces; all movements outside this area being under the direct control of Admiral Cunningham, Commander in Chief, Mediterranean. The military directive issued to the Army Commander of the Western Task Force stated that the Naval Commander was in command "until your force is firmly established ashore."

6. Thus under the joint agreements of the U. S. Army and Navy, in amphibious operations involving army and navy forces the Naval Commander commands until the Commanding General of the Landing Force sets up his command post ashore and is ready to take over. The time when this shift of command takes place is invariably dependent upon the general situation. Usually the Army Commander establishes his command post ashore when all elements of the assault forces have landed and gained their initial objectives, when a beachhead of about 10,000 yards depth has been established to place the maintenance beaches beyond the range of enemy artillery, and when the Army supply system is operating in a normal manner.

7. During the exercises of command in succession there should be no conflict of interests. Under the unity of command initially invested in the Naval Commander he does not presume to dispose or to maneuver troops in combat ashore; neither does the Army Commander, upon setting up his headquarters and assuming the command, presume to maneuver ships and control their movements or tactical handling. However, the investment of joint command does mean that the Naval Commander has the full support of all elements of the Landing Force in accomplishing the naval tasks, and the Army Commander, upon succeeding to joint command, has the full support of all elements of the Naval Attack Forces in the achievement of the military tasks.

8. There are inconsistencies in the basic instructions issued to the armed services. It is apparent that FM 31-5, the only publication available to army officers before commencement of amphibious training under navy guidance, has not kept pace with FTP 155 and FTP 167. It is apparent also that there is a wide-spread misconception in the Army regarding command and responsibilities in amphibious operations. Not only is this universally experienced during the troop training period

conducted by the Navy, but it extends to the planning of operations and to the loading and administration of naval vessels. Thus military plans issued by various Army echelons set forth directives governing the disposition of navy craft and ship's boats, their speed, their loading and employment. Other Field Orders were issued controlling the opening of naval gunfire, restricted naval targets, etc. On board ship, orders have been issued by Army Commanders controlling the admission of persons to the War Operations Room and other parts of the ship in which the military commander was embarked. Such false concepts of the authority and responsibility of military commanders can only come about through the belief that Army Commanders exercise extensive command functions while afloat. This erroneous impression may be engendered through the unfortunate use of the term "Headquarters Ship" when referring to the Flagship of the Admiral, in which ship has been embarked the Commanding General of the corresponding Army echelon. The term "Headquarters Ship" is not an accepted naval designation; the term "Flagship" connotes the vessel from which a Flag Officer commands organized forces of the Navy.

9. There is a definite need for the revision of the basic documents governing joint operations. Such revisions should place the air forces allocated to an operation under the command of that commander responsible for the success of the joint undertaking. There is a need also for the wide promulgation among all services of the approved policy of the Joint Chiefs of Staff as to command in amphibious operations.

Echelons.

10. In the interest of orderly planning, proper exercise of command, and coordinated execution of plans, it is desirable that the military, naval and air forces be organized on the same echelons.

11. In the Sicilian campaign the 7th Army organization placed the 1st and 45th Divisions under the command of a Corps Commander. Thus on the military echelon CENT and DIME assaults were under a single control. The CENT transports and major units arrived in the theater from the United States under a normal naval command. From the naval viewpoint it was neither desirable nor feasible to place the CENT and DIME naval forces under a single command. Although the CENT and DIME naval attack plans were in complete support of the CENT and DIME military attack plans of the Army Division Commanders concerned, the introduction of an additional echelon in the Army chain of command (which had no Navy counterpart) was productive of many difficulties.

12. The echelon of the Air Command in this campaign was at variance with both the Naval and Military echelons. The Tactical Air Force Headquarters retained control in the Rear Echelon of all supporting aircraft. An Air Officer was set up on the same echelon as the Naval Commander Western Task Force and the Commanding General, 7th Army, but that Air Officer was not empowered to order air strength into the assault area. His function was to control aircraft entering the area, and to request forces in support of the offensive land and sea operations. The Navy and Army commanders, who in succession were responsible for the success of the undertaking, did not exercise any authority over the air arm supporting the campaign. This arrangement is obviously contrary to the basic concept of command and is not conducive to success.

The Army.

13. During the planning phase the Force 343 (later 7th Army) Headquarters were at Rabat, French Morocco, and later at Mostaganem, Algeria. The former is 555 miles and the latter 165 miles from Algiers where the Navy Headquarters were located. The CENT and DIME naval commanders were in Oran, 200 miles westward from Algiers, and the JOSS commander at Bizerta, 335 miles to the eastward. The remote location of the Force 343 Headquarters introduced difficulties for all echelons of all services, and necessitated the assignment of liaison officers withdrawn from the naval planning staff, as well as journeys to the Army Headquarters for the purpose of coordination of plans, conferences, etc. These great distances, in a country where travel and transport is at best very difficult, increased the planning problems not a little.

14. All planners, army, navy and air should be located in the same building, and plans should be produced by all services on the same echelon in coordination. Any changes produced in the plan of any service could then be made known as occurring to the other services, the implications fully examined, and timely action taken by the services affected.

15. Planning by the higher echelons reached considerable detail, and changes later effected by staff officers created considerable confusion in lower echelons. For example, many changes

were made by higher authority in Division troop lists at a late date; these changes were promulgated at a very late date for inclusion in the subordinate plans, with the cumulative effect of delaying the completion of naval plans on the same echelon. Thus the loading of combat loaders and craft was undergoing change at a time when plans should have been fixed and in the possession of all naval commands concerned.

16. The 45th Infantry Division was required to load in the United States and sail for North Africa prior to the receipt of the Force 343 plan. For this reason the Naval Commander of the CENT Attack Force was unable to formulate his plans until after arrival in the theater of operations. Due to the flexibility of the combat-loading methods, however, satisfactory plans were produced without disturbing the pre-loaded transports.

The Navy.

17. Aside from the difficulties outlined above, the naval planners were seriously hampered in their study of beach characteristics because requests for PRU sorties, originated by the Naval Commander, were not given timely consideration. This condition was aggravated by the failure of the Air Force to provide the Naval Commander with requested prints of such sorties as were executed, though these prints were widely distributed among military commands which had no responsibility in the selection of assault beaches. The one set of low oblique pictures taken on June 18 were of great value in the naval study of shoreline details.

The Air Force.

18. The weakest link in the joint planning of the U. S. forces was the almost complete lack of participation by the Air Force. Upon the completion of the Force 141 plans, and the withdrawal from that planning staff of the army and navy planners of the Western Task Force, contacts with the Air Force were maintained with difficulty and information of the development of the Air Plan was unknown to either the army ground forces or the navy. Eventually an Air Plan was promulgated but it was found to be completely unrelated to the Military Attack Plan and the Naval Attack Plan. It contained detailed data on Air Force equipment and supplies to be landed over the beaches, but gave no specific information to the Naval and Military Commanders of what support might be expected during the assault or what, when, or where fighter cover would be provided. Bombing targets suitable for attack prior to D-day were worked out by the 7th Army Headquarters in conjunction with the Navy, and these requirements were made known to the Air Force. This list of targets was found to be unacceptable by the Air Force on the grounds that the targets were unsuitable; this in spite of the fact that the navy and the ground forces charged with making the amphibious assault were threatened by these targets. Other target lists were thereafter prepared and after much controversy, a list satisfactory to the Air Force was eventually contrived.

19. Bombing targets for D-day were similarly prepared by the ground forces and the Navy but up to the time of sailing neither the Naval nor Army Commander was informed of what bombing support, if any, could be expected. The Air Plan did state, however, that after D-day, requests could be submitted with not less than 12 hours' notice to a Target Committee located in North Africa.

20. Thus the Naval and Military Commanders sailed for the assault with almost no knowledge of what the Air Force would do in the initial assault or thereafter. They were not informed of the general air situation nor was this information broadcast to them at sea. This should have been done in order that the responsible commanders would be apprised of what softening of beach defenses and disruption of enemy communications had been achieved by the Air Force. Timely and complete intelligence information, acquired by our reconnaissance aircraft, should be broadcast to the Assault Commanders in addition to the assessment of the results of our bombing missions. Unless this is done, the assault forces are placed completely out of the picture as soon as they sail from the port of embarkation.

21. The Air Force did promulgate by dispatch to the forces at sea, the planned approach and egress of transport planes carrying paratroops on the night of D-1/D day. Written information on the plans for the employment of paratroops was never received. The matter of routing transport aircraft in the assault area had not been submitted to the Naval and Military Commanders for examination with a view to early recognition of implications to those two services. In point of fact, the route selected by the Air Force was not suitable from a naval standpoint. The Naval Commander, however, received this unilateral decision only after radio silence was imposed upon his forces, and he was unable to give voice to his objections. This failure by the Air Force to correlate plans, and acquire the timely concurrence of the other services in order that information could be

disseminated to all forces, contributed to a regrettable incident. On the night of the assault a number of the transport planes were off the prescribed route and approached the transports from the same direction as the enemy and arrived over the ships simultaneously with enemy dive bombers. One is brought to the conviction that had the Air Force joined the naval and ground force planners, as they had been so often urged to do, and thereby had brought all Air Plans into harmony with the plans of the other services, the unfortunate losses of our transport aircraft might have been avoided.

Section II — THE PLAN

1. The planning on the theater commander's echelon began in February 1943, by Force 141 (afterwards 15th Army Group), created by Commander-in-Chief Allied Forces, and containing planners from American and British Armies, Navies, and Air Forces. Upon the completion of the 141 plans, the U. S. Army and Navy planning officers returned to normal duties on the staffs of the Commanding General 7th Army and Commander Western Naval Task Force and began preparing the plans of that echelon.

2. The Appreciation produced by Force 141 was based on the following Assumptions:

- (a) That the campaign for North Africa terminated on or before 30 April 1943.
- (b) That Sardinia remained in Axis hands.

3. The CONCLUSIONS of the Appreciation were briefly as follows:

I. General

- (a) A heavier scale of air attack can be expected in the Eastern half of the Island than in the Western half.

II. Seaborne Assault Areas

- (a) The Straits of Messina are closed to Allied surface vessels and submarines and are beyond the reach of fighter protection.
- (b) Seaborne assaults between Messina and Palermo and between Catania and Messina are not feasible since they cannot be given fighter cover.
- (c) Direct assaults on Palermo and Trapani are impracticable in the face of existing coast defenses. Beaches exist to land a large force to the West of Palermo, but such an assault is not practicable until our fighters can operate either (1) from airfields in the Western group, or (2) from airfields in the Southeastern and Eastern group.
- (d) Suitable beaches exist in the Sciacca-Marinella and Avola-Gela sectors, over which to launch initial assaults, under land-based fighter protection, to seize airfields which will permit of further overland operations.
- (e) If landings are made both in the West and Southeast, two naval covering forces may be necessary.

III. Relative Importance Of Areas

- (a) The capture of Messina, and consequent isolation of the Island is of first importance, but initially its capture is not feasible.
- (b) Its capture is most likely to be achieved by early seizing of the ports and airfields in the Southeast of the Island.
- (c) The importance of an assault in the West lies in the increase in total port facilities and build-up, and it will help to immobilize the enemy reserves.
- (d) The possession of Pantellaria, although desirable, is not worth the effort necessary to reduce it; the better course is to neutralize it by air action.

IV. Comparative Rate Of Build-Up

- (a) The maximum number of enemy mobile divisions, in addition to Static Troops, which are likely to be encountered is eight.
- (b) Reinforcement through Messina will probably not increase, but will keep these divisions up to strength.
- (c) Unless the Island is attacked so as to get the use of both Palermo and Catania, we cannot maintain sufficient divisions to conquer it.
- (d) With the capture and development of Palermo and Catania, we can maintain the equivalent of 10½ divisions together with air forces.

V. Southeastern and Eastern Assaults

- (a) Two infantry divisions and one infantry brigade group are necessary to capture the airfields in the Southeast.
- (b) Three infantry divisions are needed to capture Catania and protect the beaches and ports, but only two of these can be landed and maintained through the Avola beaches. The third should, therefore, land through beaches 37 and 38, after the necessary air cover can be provided from the Southeastern airfields.

VI. Western Assaults

- (a) A force of one division and one armored combat command should be landed in the Southwest area to capture the airfields at Castelvetro and Sciacca.
- (b) A force equivalent to two divisions with such additional armored elements as can be landed and supported, should be landed at Castellamare, Trappeto and Carini to attack Palermo from the West and operate to the South and West.

VII. Timing Of Parachute Attacks

- (a) Airborne troops are necessary to neutralize the beach defenses, and their maximum employment is required.
- (b) Seaborne assaults should take place some two hours before first light.
- (c) Airborne troops should be landed preferably in the dark or at dusk in sufficient time and at such a place as to be able to complete their task before the seaborne assault takes place.

VIII. Timing Of Assaults

- (a) Owing to the over-riding importance of obtaining the maximum lift of parachutists, the initial Western assault must take place after the Eastern assaults.
- (b) The Western assaults should take place as soon as possible after the Eastern assaults, but investigation shows that D plus 2 is the earliest time at which they can take place.

IX. Date Of Assault

- (a) To allow the airborne troops to make use of some moon and to afford the approach to the coastline the cover of darkness, D day should be about 10 July, when the moon is in its second quarter.

OUTLINE PLAN

4. An outline plan based on the Appreciation was issued in early April providing for four phases:

- Phase I — Preparatory Measures
- Phase II — The Assaults
- Phase III — Exploitation and capture of Catania and Palermo
- Phase IV — Reduction of the Island

Phase I — Preparatory Measures

1. The objects of the Naval Preparatory measures were:

- (a) To reduce the enemy's naval strength.
- (b) To gain the upper hand of enemy U-boats in the Mediterranean.
- (c) To prevent the reinforcement of the Sicilian garrison by seaborne troops or material.

2. The objects of the Air Preparatory measures were:

- (a) To reduce the striking power of enemy fighters and day bombers.
- (b) To bomb enemy sources of supply, fuel stocks, base airfields, communications leading to Sicily, and naval and submarine bases in the Mediterranean.
- (c) From D minus 14 to D day the scale of attack by day and night heavy bombers will be increased until a maximum is attained at the time of the assault. During

this time the bomber force will concentrate on targets immediately affecting the battle: firstly, on airfields in Sicily, Sardinia, South Italy and Crete, and secondly, on local communication centers in Sicily and on the immediately adjoining mainland.

Phase II — The Assaults

The Assaults are staggered to provide for attacks on D day in the Southeast and East, on D plus two day in the West, and on D plus five day in the Northwest.

D Day Assaults

1. ACID (ONE) FORCE — A ship to shore movement mounted from the Middle East as follows:
 - (a) One British Parachute Brigade to be dropped the previous night to assist in the capture of the beachhead.
 - (b) One British Commando landing over beach 42 to capture the coast defense guns at Cap Murro Di Porco.
 - (c) One British Infantry Division and one British Tank Battalion to land on a two brigade front over beaches 44 and 46 to capture Syracuse and Augusta and advance on Catania.
2. ACID (TWO) FORCE — A ship to shore movement mounted from the United Kingdom as follows:
 - (a) One British Commando landing over beach 47 to capture the coast defense guns at Avola.
 - (b) One British Infantry Division to land on a one brigade front over beaches 47 and 48 to assist in the advance on Syracuse, Augusta and Catania.
3. BARK FORCE — A ship to shore movement mounted from the Middle East as follows:
 - (a) One British Infantry Brigade Group to land over beaches 51 to 56 to capture the airfield at Pachino.
4. CENT FORCE — A ship to shore movement mounted from the Middle East as follows:
 - (a) One British Parachute Brigade to be dropped the previous night to assist in the capture of the beachhead.
 - (b) One British Infantry Division and one British Armored Regiment to land on a one brigade front over beaches 64 to 66 to capture the airfields at Comiso and Biscari.
5. DIME FORCE — A shore to shore movement mounted from Tunisia as follows:
 - (a) One British Parachute Brigade to be dropped the previous night to assist in the capture of the beachhead.
 - (b) One British Infantry Division and one Armored Regiment to land on a one brigade front over beaches 67 and 68 to capture the airfield at Ponte Olivo.
6. RESERVE FORCE — One Airborne Division less three Parachute Brigades. To be ferried from Malta and Tripoli: One Infantry Division and One Tank Brigade.

D Plus Two Assaults

1. ENSA FORCE — A shore to shore movement mounted from Tunisia as follows:
 - (a) One U. S. Parachute Regiment to be dropped the previous night between Castelvetrano and beaches 86 to 88 to assist in the capture of the beachhead.
 - (b) One U. S. Regimental Combat Team to land over beach 84 on a two battalion front to capture the Sciacca airfield.
 - (c) One U. S. Infantry Division (less one RCT) with one U. S. Armored Combat Command to land on a front of one RCT over beaches 86 to 88 to capture the port of Mazzara Del Vallo and the airfield at Castelvetrano.

Phase III — Exploitation and Capture of Catania and Palermo

Capture of Catania

1. IMMEDIATE RESERVE — One British Infantry Division mounted in landing craft from Tripoli and one Tank Brigade mounted from United Kingdom in ships, to land any time after

D plus one onwards over beaches 37 and 38 or other beaches in our hands South of Augusta, to reinforce troops moving against Catania.

Capture of Palermo (D plus 5 assaults)

1. **FISH FORCE** — A combined ship to shore and shore to shore movement mounted from North Africa as follows:
 - (a) One U. S. Ranger Battalion to land over beach 1 to capture the coastal batteries at Capo S. Vito.
 - (b) One U. S. Infantry Division (less one RCT) and one U. S. Armored Combat Command to land on a one RCT front over beaches 2 and 3 with the object of severing road and rail communications between the West of the Island and Palermo and linking up with the forces at Castelvetro.
2. **GROG FORCE** — A ship to shore movement mounted from North Africa as follows:
 - (a) One U. S. Parachute Regiment to be dropped the previous night to assist in the capture of the beachhead.
 - (b) Two Regimental Combat Teams to land on a one RCT front over beach 5 to advance East on Palermo.
3. **HOOK FORCE** — A ship to shore movement mounted from North Africa as follows:
 - (a) One U. S. Ranger Battalion to land over beaches 7 and 8 to capture the coastal battery at Capo Gallo.
 - (b) One U. S. Infantry Division (less one RCT) and one G.H.Q. Tank Battalion to land over beaches 6 to 8 on a one RCT front and advance East on Palermo.
4. **RESERVES**
 - (a) One Airborne Division (less two Parachute Regiments)
 - (b) One Infantry Division (one RCT to be on 12 hours notice from H hour of the D plus 2 day assaults).

Phase IV — Reduction of The Island

No plan for this phase has been prepared. The forces ashore by D plus 11 should amount to:

Eastern Area (British)

One Division
Four Infantry Divisions
Two Infantry Brigade Groups
Two Armored Regiments
One Tank Battalion
Two Commandos
The equivalent of three
Parachute Brigades.

Western Area (U. S.)

Three Infantry Divisions
Two Armored Combat Commands
Two Ranger Battalions
One G.H.Q. Tank Battalion
The equivalent of two Parachute
Regiments.

5. On 21 May 1943 the OUTLINE PLAN described was cancelled.
By this date it was known that the assumption was incorrect that the campaign for North Africa would terminate by 30 April 1943. The neutralization of Pantellaria, Lampedusa, Linosa and Lampion was assured.
The basic Strategic Concept did not change. The appreciation which produced the original OUTLINE PLAN remained unchanged.
6. Under date of 21 May 1943 a NEW OUTLINE PLAN was issued which provided for two phases:
 - Phase I — Preparatory Measures
 - Phase II — The Assaults.

Phase I — Preparatory Measures

1. Naval and Air action will be undertaken during this phase with the object of gaining Naval and Air superiority over the enemy and reducing their striking power.
2. Operation of a Cover Plan to:
 - (a) Retard the reinforcement of Sicily by German troops.

- (b) Reduce air and naval attacks on Allied shipping destined for Sicilian operation, from D minus 7.
- (c) Keep the Italian Fleet to the East of the Straits of Messina.

Phase II — The Assaults

All assaults were scheduled for D day at the same H hour. All assaults were concentrated at the southeastern end of the Island.

The British forces were to attack on the Southern coast East of Pozzalo, and on the East coast South of Syracuse. The American forces were to attack on the South coast in the Gulf of Gela.

The attacks scheduled for United States forces were:

1. CENT FORCE — A ship to shore movement from North Africa (ex U. S.) as follows:
 - (a) 45th Infantry Division landing over beaches 65 and 66 to capture the airfields at Comiso and Biscari.
 2. DIME FORCE — A combined ship to shore movement (mounted from North Africa) and a shore to shore movement (mounted from Tunisia) as follows:
 - (a) 505th Parachute Combat Team (Reinforced) to land night D-1/D in vicinity of airfield at Ponte Olivo to capture same.
 - (b) 1st Infantry Division (less one RCT) landing over beaches 67 to 69 to capture the airfield at Ponte Olivo.
 3. JOSS FORCE — A shore to shore movement mounted from Tunisia as follows:
 - (a) 3rd Infantry Division and one Armored Combat Command landing over beaches 70 to 73 to capture the port of Licata and the nearby landing grounds.
 4. RESERVE FORCE — A combined ship to shore movement (mounted from North Africa) and a shore to shore movement (mounted from Tunisia) as follows:
 - (a) One RCT of 1st Infantry Division and one Armored Combat Command to be landed as the tactical situation demands in support of any of the planned assaults.
7. A comparison of the two plans revealed the following advantages and disadvantages:

A. ORIGINAL OUTLINE PLAN

Advantages

- (1) As compared with Malta, Northeast Tunisia affords ample facilities for airfields within single engine fighter range of the Southwest coast of Sicily. It is therefore possible to operate, within the limits of their range, a far greater number of fighters over the Southwestern Sicilian beaches than those in the Southeastern portion of the Island.
- (2) Additional fighter protection to Southwestern beaches can be provided by fighters operating from Pantellaria.
- (3) With the capture and occupation of the airfields at Sciacca and Castelvetro, fighter cover will be available to support landings West of the line Termini-Sciacca.
- (4) The attack in the West will permit the quick juncture of forces on the line Sciacca-Palermo thus isolating enemy forces in the Western portion of the Island.
- (5) With the early capture of the port of Palermo the administrative risks to the 7th Army are lessened.
- (6) The staggered timing of the attacks will prevent the enemy from committing his reserves to the Southeastern portion of the Island.

Disadvantages

- (1) The limited range of single engine fighter aircraft makes it impracticable to provide effective air support for any landing made in the area North of a line exclusive Trapani—exclusive Catania, until such time as we are able to make use of airfields in Southwest or Southeast Sicily.

(2) Although Trapani and Catania are within range of single engine fighters operating from Tunisia and Malta respectively, both areas are near the limits of their practical operational radius of action. It would therefore not be possible to maintain effective fighter cover over these places without the use of airfields in Southern Sicily.

(3) While our airforces are operating from North Africa and Malta, the only areas in which we can provide effective support for forces assaulting Sicily will be along the Southern coast of the Island between Marsala and Syracuse.

(4) The airfield capacity on Malta restricts the number of sorties to be flown from the only air bases from which short range fighter operations against the Eastern end of the Island can take place.

(5) The sea approaches from Tunisia to Western Sicily are exposed throughout their length to flank attack from aircraft based on Sardinia.

(6) The ACID FORCE appeared to be of insufficient strength to accomplish the assigned task and its left flank is considered to be exposed from the direction of Ragusa; the build-up of the ACID FORCE was considered to be too slow.

B. NEW OUTLINE PLAN

Advantages

(1) An attack from the East, rather than the West, would sever the garrison from Italy. Although a major assault in the vicinity of Messina is not feasible, its seizure is the key to the Island. An assault in the Southeast and a drive up the East side of the Island offers more opportunity of achieving this quickly than does an attack from the West.

(2) The Catania plain is the focal point of main air bases in the Island. The capture of airfields in that area, combined with the occupation of those on the Southeast coast, would place the Western group in a very isolated position; and intensive air operations might eventually make them untenable.

(3) The concentration of forces in the Southeastern portion of the Island increases the force of the blow. The early establishment of a continuous beachhead by the contiguous forces ensures mutual support and eliminates exposed flanks.

Disadvantages

(1) Vulnerability of convoys to air attack by enemy aircraft operating from air fields in Western half of Island where enemy enjoys a flanking position with respect to our sea routes.

(2) The beaches in the Gulf of Gela were more unfavorable for landing a large force than were the beaches selected under the old plan.

(3) No ports of any consequence become available to the Western Task Force in the region of the assault, thus imposing continued beach maintenance for a period estimated to be thirty days. The study of tonnages required to maintain the 7th Army plus the build-up forces versus the beach capacities indicated that the weights could not be brought in through the selected beaches.

(4) The Gulf of Gela was of insufficient size to permit adequate sea room to various transport forces and gunfire ships without interferences.

(5) The increased distance of the scene of the assault from Tunisia reduced the strength of the fighter cover to the smaller forces operating from Pantellaria. This increased distance also reduced the operational time of these aircraft over the assault area.

NAVAL OPERATION PLAN

8. My Operation Plan 2-43 (Serial 00218), dated 26 May 1943, fully supported the Military Plan promulgated by Commanding General, Force 343 (later 7th Army). My basic plan follows:

File
A4-3/N 31

Serial: 00218

SECRET
BIGOT - HUSKY

OPERATION PLAN
No. 2-43

WESTERN NAVAL TASK FORCE
U.S.S. MONROVIA, Flagship,

ALGIERS, ALGERIA
May 26, 1943 (1030)

TASK ORGANIZATION

- (a) 80. CONTROL Force
80.1 Force Flagship
MONROVIA (FF), McLANAHAN.
- 80.2 Escort Group
Desron Seven less Desdiv 14 and MAYO, Eight (9 DD).
- 80.3 Screening Group
ORDONAUX,
MTBron Fifteen (17 PT).
- 80.4 Demonstration Group
10 - ARBs,
PT 213.
- 80.5 Minelaying Group
KEOKUK, SALEM, WEEHAWKEN,
Escorts (as assigned).
- 80.6 Reserve Group
ORIZABA, CHATEAU THIERRY,
6 LST,
7 LCT,
11 LCI(L),
16 LCI(L), British.
- (b) 81. DIME Attack Force, Rear Admiral Hall, U.S.N.
Transdiv Three (8 APA-AKA)
H.M.S. PRINCE CHARLES (LSI(S)),
H.M.S. PRINCE LEOPOLD (LSI(S)),
SAVANNAH, BOISE (2 CL),
Desron Seventeen (9 DD),
STEADY, SUSTAIN (2 AM),
YMS 62, 69, 207, 208, 226, 227, (6 YMS),
PC 621, 624, 625, 627, (4 PC),
SC 676, 690, 691, 692, 693, 694, (6 SC),
HOPI (towing pontoon causeways), REDWING,
16 LST (including 2 carrying pontoons),
19 LCI(L),
U.S. Army forces (as assigned).
- (c) 85. CENT Attack Force, Rear Admiral Kirk, U.S.N.
ANCON (F),
Transdiv One, Five, Seven (18 APA-AKA),
PHILADELPHIA (1 CL),
H.M.S. ABERCROMBIE,
Desron Fifteen, Sixteen less McLANAHAN, ORDRONAUX (16 DD),

COLE, BERNADOU, DALLAS (3 ODD),
Mindiv Seventeen less STEADY, SUSTAIN (4 AM),
YMS 16, 18, 34, 36, 37, 43, 55, 58, 63, 64, 82, 83, (12 YMS),
PC 542, 551, 556, 557, 558, 591, (6 PC),
SC 1029, 1030, 1043, 1044, (4 SC),
NARRAGANSETT, NAUSET (Each towing pontoon causeways),
14 LST (Including 10 loaded for 45th Div; 3 carrying pontoons),
8 LCT-5,
6 LCI(L),
U.S. Army forces (as assigned).

- (d) 86. JOSS Attack Force, Rear Admiral Conolly, U.S.N.

BISCAYNE (F),
H.M.S. PRINCESS CHARLOTTE (LSI(S)),
H.M.S. PRINCESS ASTRID (LSI(S)),
Crudiv Thirteen (BROOKLYN, BIRMINGHAM) (2 CL),
Desron Thirteen (9 DD),
SEER, SENTINEL (2 AM),
YMS 3, 13, 15, 20, 21, 78, (6 YMS),
PC 543, 545, 546, 550, 559, 562, 626, (7 PC),
SC 497, 498, 503, 506, 508, 522, 526, 530, 532, 533, 534, 535, 638, 639,
649, 651, 655, 666, 695, 696, 697, 770, 771, 977, 978, 979, (26 SC),
MORENO (towing pontoon causeways), INTENT, RESOLUTE,
40 LST (Including 5 carrying pontoons; others carrying 6 LCVP and
fitted as hospital carriers),
85 LCT-5,
54 LCI(L),
12 LCT-3 or 4, British,
9 LCG(L), British,
7 LCF(L), British,
U.S. Army forces (as assigned).

- (e) 87. Train, Captain Tuggle, U.S.N.

DELTA,
VULCAN,
MOUNT BAKER,
TARAZED,
WINOOSKI, MATTAPONI, CHICOPEE, SALAMONIE, CHEMUNG, NIOBRARA,
CHAMBERLAIN.

1. Information. (1) Current information on hostile forces and on characteristics of the Theater of Operations is listed in Information Annex, Annex A. Additional information, as available, will be separately distributed.
- (2) The Western Task Force is part of a combined Allied force which has as its mission the capture of SICILY as a base for future operations.
- (3) The Western Task Force is being employed in the waters to the westward of the island. Operations by British forces on the same echelon are taking place simultaneously in waters to the eastward of the southeastern portion of the island.
- (4) The area of the Western Task Force is bounded:
- (a) On the North, by the parallel of thirty-eight degrees North.
- (b) On the West, by the meridian of twelve degrees East.
- (c) On the Southwest, by a line drawn one one zero degrees from POINT SPADILLO (PANTELLARIA).
- (d) On the Southeast, by a line drawn two two five degrees from RELIGIONE POINT (SICILY).
- (5) Enemy ports which will come under the control of UNITED STATES forces are PORTO EMPEDOCLE, MARSALA, TRAPANI, and PALERMO. Other ports on the southern coast may be occupied during the early phases of the operation in order to maintain our military forces. Maintenance of our military forces will be undertaken also

through the port of SYRACUSA as soon as that port is captured and made available to our shipping. Upon the opening of ports to the shipping of the Eastern Task Force, additional British landing craft may be allocated to the Western Task Force to assist in the maintenance over the beaches of UNITED STATES military forces.

(6) British submarines will act as navigation beacons in each area selected for American attacks (see Submarine Plan, Annex H).

(7) Fighter coverage of the Western Task Force will be provided: by North African Coastal Command during movements along the north coast of Africa and during passage through the TUNISIAN war channel; by the MALTA command during the northern approach on D minus one day. Until the capture of SICILIAN air fields: cover over the CENT Attack Force and DIME Attack Force will be provided by MALTA; cover over the JOSS Attack Force by PANTELLARIA. When SICILIAN air fields are captured and placed in operation, (probably D plus three), day and night fighter cover will be provided over landing beaches, ships lying off-shore, and convoy movements. (See Air Plan, Annex F).

(8) Friendly aircraft participating in the operation will be marked with existing National markings, except that the UNITED STATES white star will be enclosed in a yellow circle. Thus all Allied aircraft will have the general similarity of a circle, i.e., the British and French roundel and the UNITED STATES circle enclosing the star. (See Air Plan, Annex F).

(9) Force "H," a strong British force, will cover the Allied assaults from enemy surface vessel approach from the IONIAN SEA. If the Italian Fleet sorties from western ports of ITALY, Force "Z," a strong British force, will operate southward of SARDINIA in positions favorable to covering the Allied assaults from enemy surface vessel approach from the TYRRHENIAN SEA.

(10) On D minus two, a Covering Group, consisting of UNITED STATES cruisers and destroyers, will cover the eastward movement of Allied convoys, operating in accordance with Covering Group Directive, Annex O.

(11) During the nights D minus two/D minus one a British screening force comprising two MTB flotillas and one MGB flotilla will operate to screen the western flank of the Western Task Force. The operating area of this screen will be west of the meridian thirteen degrees forty minutes East, and north of a line connecting Latitude thirty-six degrees forty minutes North, Longitude thirteen degrees forty minutes East, with Latitude thirty-eight degrees North, Longitude eleven degrees East. At zero eight hundred on D day this screen will come under the command of Naval Commander, Western Task Force.

(12) Controlled mine fields are reported to exist off all southern beaches, except possibly beach number eighty-eight. Beach data given in Information Annex, Annex A.

(13) During moonlight on D minus one, own paratroops will be dropped from transport planes into zones behind the enemy lines in order to capture enemy airfields and divert enemy forces from the beach defenses prior to the assault from seaward.

(14) When military operations are undertaken for the reduction of the island, a Support Force, comprising light cruisers and destroyers, will be assigned to support the reduction operations by naval bombardment.

Assumptions. (1) That the initial landing will take place during darkness.

(2) That strong submarine, E-boat, and air attacks are to be expected.

(3) That mines may be encountered.

(4) That no harbors will be available and that initial landings must be over beaches.

(5) That weather conditions will permit landing through the surf on designated beaches.

(6) That false beaches will not preclude the landing ships and craft from landing on the true beaches.

(7) That own paratroops will divert enemy forces from the beach defenses prior to the landings made from seaward.

(8) That the maintenance and build-up of the military forces can be continued over beaches until adequate ports become available and are rendered usable to meet logistic requirements.

2. This force will firmly establish Western Task Force in positions ashore on the island of SICILY suitable to its capture of the south-eastern portion of the island in order to assist in seizing and holding that island as a base for future operations.

3. (a) CONTROL Force, Force Flagship operate as directed by Naval Commander Western Task Force.
Escort Group escort convoys in accordance with Convoy Plan, Annex I.
Protect convoys against submarine, surface, and air attack. Upon arrival in attack area, render gunfire support as directed.
Screening Group screen JOSS Attack Force against hostile surface forces approaching from bases in WEST SICILY. Frustrate enemy E-boat raids. Operate in accordance with Screening Group Directive, Annex K.
Demonstration Group conduct deceptive operations in accordance with Demonstration Group Directive, Annex L.
Minelaying Group lay mines in accordance with Minelaying Group Directive, Annex M.
Reserve Group LCT's sail with TJS-1 enroute to DIME area, LST's sail with TJM-1 enroute to DIME area, and LCI(L)'s sail with TJF-1 enroute to DIME area; ORIZABA and CHATEAU THIERRY sail with CENT Attack Force joining DIME Attack Force in accordance with Departure and Rendezvous Plan, Annex G; subsequent movements as directed by Naval Commander Western Task Force.
- (b) DIME Attack Force establish assigned Army Forces ashore near GELA by simultaneous attacks on selected beaches at H hour on D day in accordance with plan of attack developed by Commanding General concerned. Capture and secure the airfield at PONTE OLIVO, extend the beachhead to the East and Northeast to include the line RAGUSA-CHIARAMONTE-CALTAGIRONE and gain contact with the British forces on the East. Support military operations by naval gunfire in accordance with Fire Support Plan, Annex B. Silence batteries and destroy searchlights which threaten transports, beaches, and landing craft. Take advantage of opportunity to move transports inshore during darkness, and in daylight when shore batteries have been silenced. Upon joining in accordance with Departure and Rendezvous Plan, Annex G, sail ORIZABA and CHATEAU THIERRY of Reserve Group to DIME area. Expedite unloading transports; utilize fully twelve LCT's ex-JOSS Attack Force.
- (c) CENT Attack Force establish assigned Army Forces ashore near SCOGLITTI by simultaneous attacks on selected beaches at H hour on D day in accordance with plan of attack developed by Commanding General concerned. Capture and secure the airfields at COMISO and BISCARI, extend beachhead to the East and Northeast to include the line RAGUSA-CHIARAMONTE-CALTAGIRONE, and gain contact with the British forces on the East. Support military operations by naval gunfire in accordance with Fire Support Plan, Annex B. Provide own air spot. Silence batteries and destroy searchlights which threaten transports, beaches, and landing craft. Take advantage of opportunity to move transports inshore during darkness, and in daylight when shore batteries have been silenced. Sail ORIZABA and CHATEAU THIERRY of Reserve Group, releasing in accordance with Departure and Rendezvous Plan, Annex G. Expedite unloading transports; utilize fully fourteen LCT's ex-JOSS Attack Force.
- (d) JOSS Attack Force established assigned Army Forces ashore near LICATA by simultaneous attacks on selected beaches at H hour on D day in accordance with plan of attack developed by Commanding General concerned. Capture and secure the port and airfield at LICATA; protect the left flank of the operation against interference from the northwest. Support military operations by naval gunfire in accordance with Fire Support Plan, Annex B. Silence batteries and destroy searchlights which threaten landing craft and beaches. Sail craft of Reserve Group as follows; LCT's in TJS-1, LST's in TJM-1, and LCI(L)'s in TJF-1. Prior to execution of JOSS Approach Plan, release Reserve Group. Exploit port facilities to maximum to ensure troop maintenance. Be prepared to unload four coastal freighters upon arrival D plus four day. When unloaded from assault flight release twelve LCT-5 to DIME Attack Force and fourteen LCT-5 to CENT Attack Force.
- (e) Train render logistic services to all Task Forces as required. Base on ORAN, ALGIERS, BIZERTA, or as directed.
- (x) (1) This Operation Plan will be placed in effect by dispatch or sealed orders.
(2) D day and H hour will be signalled.
(3) The assault is to be pressed home with relentless vigor regardless of loss or difficulty.

- (4) Take every available measure to ensure,
 - (a) earliest warning of submarine attack, and
 - (b) destruction of hostile submarines.
 - (5) Destroy enemy forces encountered.
 - (6) Take all practicable precautions against mines.
 - (7) Take appropriate steps to ensure safety of submarines stationed as beacons. Escort submarines in accordance with Submarine Plan, Annex H.
 - (8) Employ smoke to fullest extent for defense against enemy action and to screen own operations.
 - (9) Take special precautions to ensure early recognition of friendly aircraft.
 - (10) Take special precautions to avoid compromise of infra-red receivers.
 - (11) Extend timing of boat waves to avoid congestion on beaches.
 - (12) Site pontoon bridges expeditiously.
 - (13) Ensure effective boat salvage operations.
 - (14) Clear landing ships and craft promptly in order to ensure prompt follow up. Provide adequate escorts. Route shipping in accordance with Convoy Plan, Annex I.
 - (15) Maintain radio silence and visual silence except as modified by Communication Plan, Annex C.
 - (16) The following documents, in the possession of Commanders of Attack Forces, are in effect:
 - (a) MEDITERRANEAN (W) Combined Navy/Air Orders.
 - (b) MEDITERRANEAN (W) Naval Air Defence Orders.
 - (c) MEDITERRANEAN (W) Secret General Orders.
 - (17) Landing ships and craft base on BIZERTA - TUNIS; other ships base on ORAN - ALGIERS.
4. Evacuation of wounded in accordance with Medical Plan, Annex D. Logistic support in accordance with Logistic Plan, Annex E.
 5. Use Communication Plan, Annex C. Use zone BAKER time.

Rendezvous:

A. CASABLANCA	O. LINOSA
B. GIBRALTAR	P. LAMPEDUSA
C. ORAN	Q. PANTELLARIA
D. ARZEW	R. MALTA
E. ALGIERS	S. SYRACUSA
F. BOUGIE	T. RELIGIONE POINT
G. PHILIPPEVILLE	U. CAPE SCALAMBRI
H. BONE	V. SCOGLITTI
I. BIZERTA	W. GELA
J. CAPE FARINA	X. LICATA
K. TUNIS	Y. Latitude 36°53'N.
L. CAPE BON	Longitude 13°50'E.
M. SOUSSE	Z. Latitude 36°07'N.
N. TRIPOLI	Longitude 13°30'E.

The Short Title of this Plan is "HON/W2".
 Naval Commander Western Task Force in MONROVIA with DIME Attack Force.

H. K. HEWITT,
 Vice Admiral, U. S. Navy,
 Naval Commander Western Task Force.

ANNEXES (To be issued separately)

- | | |
|-----------------------------------|-----------------------------------|
| A. Information Annex. | I. Convoy Plan. |
| B. Fire Support Plan. | J. Approach Plan. |
| C. Communication Plan. | K. Screening Group Directive. |
| D. Medical Plan. | L. Demonstration Group Directive. |
| E. Logistic Plan. | M. Minelaying Group Directive. |
| F. Air Plan. | O. Covering Group Directive. |
| G. Departure and Rendezvous Plan. | P. Intelligence Annex. |
| H. Submarine Plan. | |

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† 20 Copies furnished CinCMed for distribution as deemed advisable. Copies for British Units listed in Task Organization will be distributed via Task Force Commander.

* 30 Copies furnished CTF 86 for further distribution to Flotilla and Group Commanders of LST's, LCI(L)'s, and LCT(5)'s.

J. M. BOIT,
Commander, U. S. N. R.,
Flag Secretary.

PART IV
EXECUTION OF THE PLAN

Section I — REHEARSALS

1. Amphibious training of the 1st Infantry Division and 2nd Armored Division was conducted in the Arzew area, while the 3rd Infantry Division carried out shore to shore training in the Bizerta-Tunis area. The 82nd Airborne Division moved from Casablanca to its training area near Oudja, and finally to its staging area near Kariouan, Tunisia.

2. All Army units comprising the assault forces were moved forward to staging areas by June 22, the date of the arrival from the United States of the 45th Division embarked in combat loaded transports.

3. The period 22 June - 4 July was utilized in carrying out rehearsals of the assault landing and in special training of task groups. This special training included operations by certain escort vessels with the British submarines designated as navigational beacons, training of AMs, PCs and SCs in the operations of Control Vessels, and training of various types of Support Craft.

4. In addition to this brief training period, the time was utilized for the installation of necessary radio equipment, special signalling devices, voice projection apparatus, etc.

5. Rehearsals were held at selected beaches near the ports of embarkation. In the case of the CENT and DIME Forces, this involved the movement to sea of the loaded transports, escorts and gunfire support ships. Due to the proximity of enemy aircraft and enemy submarines, these night operations were undertaken at considerable risk. Selected units of each RCT were landed on the rehearsal beaches in accordance with the scheme of maneuver planned for the actual assault. These rehearsals were not full scale landings.

6. The 3rd Infantry Division embarked in the landing ships and landing craft assigned for the operation and carried out a number of night shore to shore exercises in the Bizerta area.

7. Upon the completion of the rehearsals, all vehicles that had been landed were sent back to the concentration areas for re-waterproofing and reloading aboard ship.

8. Troops of the 45th Infantry Division were placed ashore for five days' reconditioning training. Upon the completion of the rehearsals, troops of all divisions were assembled in staging areas for final loading in assault transports and craft. The staging areas had been selected by the Army with relation to available bivouac areas close to loading ports selected by the Navy.

9. The rehearsals for the Sicilian invasion were hurriedly planned because of the shortage of time available and were at best a "dry run" on reduced scale. To ensure maximum benefit of rehearsals, adequate time should be available for detailed planning in order that the exercise may simulate as nearly as possible the actual assault. Individual RCTs should land as units prior to the full scale landing of the division. In the latter case it should be carried out in such manner as to require complete unloading of a limited number of ships or craft in the execution of the plan of attack of certain RCTs. This completeness is particularly desirable in order to give the Shore Party, Beach Party and boat crews a full scale workout. Token rehearsals invariably stop short of the critical phase of the landing when beaches become heaped with supplies, boats are disabled, and the Army supply system is in danger of breakdown. Full scale unloading during rehearsals would bring the beach organizations face to face with their real problems and would permit corrective measures to be taken before the actual assault. In planning such full scale rehearsals the following must be provided for:

- (1) replacements or repair of boats and craft lost or damaged during the rehearsal
- (2) re-waterproofing of all vehicles landed during rehearsal
- (3) adequate time to reload ships and craft for the assault
- (4) adequate time to hold critiques after the rehearsal, make necessary changes to plans and distribute same to forces involved.

Section II — CONVOYS AND ROUTING

1. For the initial assault on the island of Sicily, over six hundred ships and landing craft were allocated to the Naval Commander, Western Task Force. Of this total, one hundred and thirty

warships, consisting of cruisers, destroyers, PCs, YMSs, SCs were available to escort, covering and support duties. Three hundred and twenty-four ships and landing craft, consisting of combat loaders (APAs, AKAs, XAPs, and APs), LSTs, LCI(L)s, and LCTs, were made available for loading and transporting assault troops and necessary assault weapons, of the Seventh Army, from the mounting and staging ports in North Africa to the CENT, DIME, and JOSS Attack areas on the South coast of Sicily. The remainder of the vessels allocated comprised PT Boats, Air Sea Rescue Boats, Minelayers, Landing Craft Gun and Flak, and fleet tugs. There were four Belgian LSI(S) of the PRINCE LEOPOLD class and one British monitor.

2. Oran was the staging port for the combat-loaded Forty-fifth Division because that port was under the operating control of American Naval Command, the combat loaders, which brought this Division from the United States, could be accommodated there, and because it was farthest removed from possible air attack. Bizerta and Tunis were the mounting ports for LSTs, LCI(L)s, and LCTs because those ports were large enough to accommodate the landing craft and were the North African ports located closest to the assault areas assigned to the Western Task Force. Sousse became the staging port for the LCI(L)s because the movement cleared Tunis of some of the traffic load and because the assault voyage was shortened for the embarked infantry. Algiers was the loading port for combat loaders of the DIME Force because Oran harbor became filled to capacity and Algiers was the only other port on the North African coast where large ships could be berthed.

3. In order to utilize escort ships to the fullest possible degree, ships were initially classified into four principal categories according to speed, operating range, and mounting and staging ports. In like manner the individual convoys were made up, first, to meet the same considerations and second, to provide for economy of aircraft fighter cover. The combat loaders were assigned to a convoy in two sections, originating from Oran and Algiers. LSTs mounted troops and armor in Bizerta and Tunis and sortied from those harbors at approximately the same time, to rendezvous in the Tunisian War Channel and to proceed Easterly together. LCI(L)s mounted in Tunis, staged through Sousse and departed from that port on D-1. This LCI(L) convoy then made junction with the LST convoy while enroute to an assigned Gozo Island landfall, prior to making the Approach to the assault areas. LCTs were sections of one convoy, the two sections respectively departing from Bizerta and Tunis and joining up in the War Channel, thence proceeding Eastward, via Cape Bon, South of Pantelleria and toward Malta holding to that course until 1700 on D-1 when the convoy turned North into the Approach.

4. The maintenance of the military forces during operation HUSKY involved three naval phases. The first phase included all convoys moving to reach the assault area on D day. Phase two was the follow-up. It included all convoys moving to reach the assault area after D day and until the military forces comprising the Western Task Force was landed in Sicily, and, it likewise included the maintenance of those forces. Phase three involved troops additional to the assault forces of the Western Task Force which were moved into Sicily. Phase two was a continuing movement during the early stages of phase three.

5. All assault convoys were routed by Commander-in-Chief, Mediterranean, until they entered the area of operations assigned to the Western Task Force.

6. Convoy routes were chosen to meet the following considerations:

- (a) That convoys should approach the attack areas during darkness and should arrive in the Initial Transport Areas in time to meet H hour.
- (b) That convoys must be prepared to meet strong submarine, E-boat and air attacks and that mines might be encountered.
- (c) That swept channels should be used wherever possible.
- (d) That convoys should be within reach of the maximum air coverage throughout voyages.
- (e) That routing should avoid mutual interference with other forces.
- (f) That movements of ships support the "Cover" Plan.
- (g) That wherein troops are crowded into landing craft, the time afloat should be reduced to a minimum compatible with other considerations.
- (h) That a landfall rendezvous for ships and landing craft would give these vessels an accurate navigational fix.

7. These considerations were met as follows:

- (a) That convoys should approach the attack areas during darkness and should arrive in the Initial Transport Areas in time to meet H hour.

Since H hour was set for 0245, the attack convoys were required to be in the Initial Transport Areas at approximately H-3 hour in order to carry out the assault landing on schedule.

Convoy speeds-of-advance used were thirteen knots for combat loaders, twelve and a half for LCIs, eight knots for LSTs, and six and a half for LCTs. The time of rendezvous of LST and LCI convoys off Gozo Island was 1600/D-1 and the passage of the combat loaders through that point was on and after 1850 the same day. To meet this schedule, convoy NSF-1 left Oran on D-5 and was joined by the first section at Algiers on D-4. LSTs and LCTs sortied from Bizerta and Tunis on D-2. LCI convoys left the staging port of Sousse on D-1.

- (b) That convoys must be prepared to meet strong submarine, E-boat and air attack and that mines might be encountered.

Task Force Commanders of DIME, CENT and JOSS Forces made provision in their orders to meet submarines and air attacks. Convoy routes were through swept channels wherever possible and enemy surface vessels attacks were guarded against by Covering Groups and Screening Groups.

- (c) That swept channels should be used wherever possible.

Swept channels, other than harbor and port exits, included the Tunisian War Channel, the Gulf of Tunis Channel, a swept channel in the vicinity of Sousse, and swept areas in the vicinity of Pantellaria.

- (d) That convoys should be within reach of the maximum air coverage throughout voyages.

Air cover was available during Phase I,

- (i) off the Algerian and Tunisian coasts by aircraft of the Northwest African Coastal Air Force,
(ii) in the Sicilian Strait by U. S. Air Corps S. E. fighters operating from Pantellaria and Lampedusa,
(iii) in the vicinity of Malta and in the Malta Channel by RAF fighter squadrons operating from Malta. The maximum fighter cover was planned for convoys at dawn, dusk and during periods of moonlight.

Air cover was planned during Phase II and Phase III,

- (i) off the beaches, by aircraft operating from Malta, and, when possible, by twin engine fighters based in Tunisia;
(ii) by aircraft operating from captured air fields in Sicily.

- (e) That routing should avoid mutual interference with other forces.

In order to avoid mutual interference, convoys were scheduled as to approximate time of leaving mounting or staging ports, and were further scheduled as to arrival at points where there was urgent necessity for keeping clear of other shipping. Due to narrowness of the Tunisian War Channel, and in order to effect rendezvous of forces joining up, and to keep air forces informed of location of convoys, it was necessary to stipulate time of arrival off Bizerta, as well as to declare a speed over the ground in order to avoid overtaking while in the War Channel. In like manner, there was a time set for the landfall of LST convoys off Gozo Light and for the subsequent joining up of LCT convoys. The first section of NCF-1 was routed through the Gozo rendezvous at 1850 on D-1 in order that it might follow closely behind the United Kingdom convoy KMF-18 and yet pass the North Gozo tangent in time to allow the second section to remain on an adequate schedule.

One of the problems involving convoy routing was proper timing to prevent mutual interference. According to the first draft of the Convoy Plan, Second Section of NCF-1 (CTF 85) was scheduled to leave Oran on D-4, was to rendezvous with First Section NCF-1 to seaward of Algiers on D-3, and was to proceed Easterly behind the First Section NCF-1 at a distance of six miles. Expected speed of advance was thirteen knots. This was scheduled because British convoy KMF-18, at speed of 12½ knots, was scheduled to be in advance of NCF-1 by a sufficient distance at Algiers that the overtaking NCF-1 convoy would still be thirty minutes of cruising time behind at the moment of passing Bizerta. This was provided in CinCMed HUSKY Orders in order to prevent interference in the Tunisian War Channel between convoys KMF-18, NCF-1 and the landing ship and landing craft convoys of CTF 86 which were making sortie from Bizerta shortly after dawn on D-2. Accordingly, KMF-18 planned to pass Bizerta at 0500 on D-2. A further benefit of this schedule was that it provided for economy of fighter cover over the area transversed.

The convoy plans issued by CTF 81 and CTF 85, however, brought up the possibility of a night-time rendezvous off Algiers under the above plan, and, since night rendezvous are undesirable, CTF 81 requested that time of rendezvous at Algiers be moved up as necessary to permit

junction of the two sections of NCF-1 in daylight, preferably on D-4. This request necessitated the second section departing Oran on D-5.

In the execution of the changed plan, the net result of this request by CTF 81 was twofold. After junction of first and second sections NCF-1, onward routing from Algiers was altered in order to prevent interference between convoys NCF-1 and KMF-18. The speed and speed-of-advance of NCF-1 was reduced below thirteen knots, thereby causing increased concern over the possibilities of submarine attack. Commander, Western Naval Task Force, sent orders to the Officer in Tactical Command to increase speed. Second, this late hour change in the speed of advance of NCF-1, and in the routing of that convoy, affected the North African Air Force plans to some extent. Planes, ordered to cover the sortie and initial passage of NCF-1 Easterly from Algiers, were late in making contact with that convoy.

(f) That movements of ships support the "Cover" Plan.

The movements of Landing Craft Convoys were in the direction of Malta, and the routing of the combat loaders was in the general direction of Tripoli, with the object of deception of the enemy as to the destination, date and intentions, generally, of our forces. In this manner was the routing of American ships and craft coordinated with the routing of ships and craft of the Eastern Task Force in order to carry out the conditions of the Cover Plan.

(g) That wherein troops are crowded into landing craft, the time afloat should be reduced to a minimum compatible with the other considerations given.

Landing Craft (infantry), carried troops from Bizerta and Tunis to Sousse on D-4. These troops remained ashore until the afternoon of D-2 and then reembarked for the assault flight. By this means, the time of troop carry, under crowded conditions, was reduced to a minimum in this instance. Due to the scarcity of large harbors in Northwest Africa, a long haul had to be accepted in the case of combat loaders, and an extended period of time afloat had to be accepted with LCT convoys.

(h) That a landfall rendezvous for ships and landing craft would give these vessels an accurate navigational fix.

Routing the LST and LCI convoys through a landfall rendezvous off Gozo Light made possible a more accurate approach to the Initial Landing Craft Areas while at the same time supported the "Cover" Plan by having the convoys maintain a base course Eastward toward Malta as long as possible.

8. The Operation Orders of the Commander-in-Chief, Mediterranean, required the presence of a Covering Group (TG 80.7) during the Eastward passage of Naval Attack Convoys along the North Coast of Africa and through the Tunisian War Channel. The Covering Group, comprising three light cruisers and seven destroyers, was formed off Algiers on D-4, when sections of NCF-1 made junction. They then steamed Eastward, ahead of the convoys NCF-1 and KMF-18, so as to maintain a suitable covering position with relation to the transports. Convoys KMF-18 and NCF-1 were scheduled to pass outside Bizerta at approximately 0600 and 0630/D-2, respectively. During night hours D-3/D-2, as these convoys entered the Tunisian War Channel, the favorable covering position was, Northward of a series of minefields which protected Bizerta, and Eastward of the convoys such that enemy surface vessels would not be able to attack the convoy from the Tyrrhenian Sea without interception by the Covering Group. Hence the Covering Group Directive advised the approximate position Latitude thirty-eight degrees ten minutes North, Longitude eleven degrees zero zero minutes East at 0100/D-2. Then, since the two convoys KMF-18 and NCF-1 were approximately twenty miles East of Bizerta at 0800/D-2 and were heading for Cape Bon with the intention of rounding to the South, Covering Group was advised a second approximate position in Latitude thirty-seven degrees seven minutes North, Longitude eleven degrees forty minutes East at 0800/D-2. This movement provided for rotating the Cover in relation to the convoys during their passage through the War Channel, in order to interpose continuous interception forces between convoys and possible enemy sorties. The second position of the cruisers also served as information for the North African Coastal Air Force to establish daylight fighter cover over them.

9. Prior to publication of the Covering Group Directive, consideration was given to provision of night fighter cover to that group during the night of D-3/D-2. CTG 80.7's route was close North of a minefield which extended Northerly from a point in the vicinity of Bizerta, a distance of nearly one hundred miles. It was not possible for the Covering Group to pass closer to the North Coast of Africa except by passing through the War Channel which movement was not compatible with the mission of the Covering Group. The North African Coastal Air Force stated that no night fighter cover could be provided because the route of the cruisers was beyond the operating range of single engine fighters and that twin engine fighters were not available.

10. Phase two was the follow-up. It included all convoys moving to reach the assault area after D day and until the military forces comprising the Western Task Forces were landed in Sicily and it likewise included the maintenance of those forces.

11. Additional to the ships and landing craft allocated for the initial assault, approximately sixty ships were allocated to the Commander, Western Naval Task Force. These ships participated in the follow-up and supplemented the turn around of landing craft in loading and transporting further elements of the 7th Army. These sixty ships were sailed in three convoys; two from Oran and Algiers on D-3 and D-4, and one convoy from the United Kingdom passing Algiers on D-1 day. The convoys followed the normal coastal route along the North African coast at speeds of advance of eight knots for the two originating in Oran and Algiers, and a speed of twelve knots for the United Kingdom convoy.

12. In the turn around for landing craft, all that were designated for carrying supplies were directed to proceed to Bizerta because the Army supply depot (Eastern Base Section) was located there. Tunis was the loading point for vehicles and personnel only. Hence, after departure of the assault convoys, no maintenance supplies were loaded at the port of Tunis. The routes which were designated for returning landing craft ran westerly from the Attack areas to a position north of Pantellaria and to the Tunisian War Channel off Cape Bon, thence by swept channels to Tunis or Bizerta as appropriate. The landing craft route back to the Attack areas was by swept channels to Cape Bon and then easterly and south of Pantellaria, thence on northeast courses to the proper landing craft area. Each route was six miles wide and convoys were directed as follows: "Convoys or groups of ships or craft with a speed of advance of ten knots or more are to keep to port of the center line. Convoys or groups of ships or craft with a speed of advance of less than ten knots are to keep to starboard of the center line." The primary reason for designating shuttle routes was for simplification of aircraft fighter cover and ease of surface patrol. Furthermore the routes were made narrow because it was not possible to sweep a wider channel against mines with the mine sweeping forces available. Also the routing helped to prevent convoys from crossing one another, especially at night.

13. Phase three involved movements of troops into Sicily, additional to the assault forces of the Western Task Force. These movements involved the continued shuttle of landing ships and craft from Tunisian and Tripolitanian ports, and the employment of personnel ships and M/T store ships from Algerian and Egyptian ports. Finally the logistic build-up of the occupation forces was provided in UGS convoys from the United States and KMS convoys from the United Kingdom. Combatant vessels of the Western Task Force were employed as escorts for these convoy movements affecting the Seventh Army, which were routed by direct route to designated Sicilian ports available at the time. Phase three commenced before the second phase had been completed and ran concurrently with it until the Western Task Force had been landed in Sicily, after which the third phase continued in accordance with the plans of the Allied Force Headquarters which provided for distribution of forces in Sicily as a base for future offensive operations.

Section III — APPROACH:

1. The Approach Plan of the Western Naval Task Force was designed to provide an orderly, timely, and well-coordinated approach from a landfall rendezvous, and permit daylight deployment of forces in order to deliver simultaneous attacks in strength.
2. Factors affecting the Approach Plan were:
 - (a) The preliminary disposition of forces imposed by the steaming radii and seaworthiness of various types of vessels employed.
 - (b) Movements of forces conforming to the "cover plan."
 - (c) Movements of covering forces.
 - (d) Routing of forces to ensure maximum air coverage.
 - (e) Mutual non-interference by forces with regard to space and time factors.
 - (f) Economy of time afloat for troops embarked in landing craft.
 - (g) Consideration of mineable waters.
 - (h) Selection of a suitable landfall favorable to obtaining an accurate navigational fix.
 - (i) Enabling units and groups sailing in different convoys to effect rendezvous in daylight.
 - (j) Placing the main assault forces on a long run on the approximate approach course.
 - (k) Permit deployment of forces during daylight on the approach course.

- (l) Selection of approach courses most suitable for use of fathometer and radar during close approach to enemy shores in darkness.
- (m) Selection of approach courses requiring the minimum of maneuvering by assault ships after entering initial transport area.

3. The Approach Plan as promulgated, satisfied, with minor exceptions, all the factors tabulated above. It provided for the routing and timing of landing craft convoys sailing from Sousse, Tunis, and Bizerta to enable the LSTs (Convoy TJM-1) and LCIs (Convoy TJF-1) to make a rendezvous and later a landfall 270° 5 miles from Gozo Island light at 1600 on D-1, thence proceeding northwestward to join LCT movement (Convoy TJS-1) at 1800 near the meridian of 14° East from whence the approach was made by the JOSS Force.

4. During D-1 the weather was most unfavorable for craft convoys, the wind velocity being about 35 knots with a moderate sea. In spite of this heavy weather, the craft made the Gozo landfall on time where the LSTs and LCIs of the CENT, DIME, and KOOL groups were released. The JOSS forces, comprising the greater part of the craft, then maneuvered to execute the JOSS approach. On a northerly course the LSTs had difficulty making 8 knots, the LCIs were taking seas over solid, and the smaller craft were making heavy weather of it. The formations were in good order but gradually began to straggle. The LCT convoy was directed to proceed independently and considerable concern was felt as to whether the LCT tank waves would arrive at the assault beaches in time to support the assault infantry. This was accomplished, however, in the face of extremely adverse weather conditions.

5. In order to meet the H-hour, it became necessary to press the JOSS LSTs and LCIs in spite of the wind and sea conditions. This caused some LSTs in the groups to lag to the extent as to lose sight contact with the next group ahead, resulting in some craft becoming separated from their proper groups and eventually anchoring in the wrong area in the initial transport area. The Control Ships, acting as escorts during the approach, likewise became separated and were not in their proper positions in the Rendezvous Areas to assemble and lead the assault LCVPs to the beach.

6. The JOSS forces, however, closed on the reference vessels and the Beacon Submarine, which were on their prescribed stations and which made the prescribed beacon signals in the face of enemy searchlight illumination and momentarily expected enemy gunfire. The navigational phase of this approach could not have been improved upon, and all Attack Groups were able to attain their initial transport areas and land at their respective beaches.

7. The DIME and CENT forces were routed well southward of Malta so as to make a long run on the approximate approach course. These forces comprised Convoy NCF-1; the DIME force being the 1st section, scheduled to pass through a position 270° 5 miles from Gozo Light at 1850; and the CENT force, 2nd section, steaming about 7 miles astern of the 1st section, scheduled to pass through position 270° 5 miles from Gozo Light at 1920.

8. Also approaching this position westward of Gozo was convoy KMF-18 carrying the BARK (SOUTH) assault forces. KMF-18 was scheduled to pass the Gozo tangent at 1815, ahead of Convoy NCF-1, but, due to head winds and seas, this convoy was behind schedule. This force was also observed to be westward apparently of the intended longitude when passing 270° from Gozo Light.

9. At any rate, the DIME force passed through the assigned position on time, and the CENT force nine minutes behind schedule. The slight delay of the CENT force may be attributed to the maneuvers executed by the second section of NCF-1, beginning at 1802, when this force slowed to ten knots, and at 1815 began taking cruising disposition in accordance with CTF 85 Approach Plan.

10. The LSTs and LCIs of the CENT and DIME Forces, upon being released off Gozo Light at 1600, headed northeastward to assigned positions where routes were taken to enable the smaller vessels to join up with the transports coming up from the southward. As these craft headed up on northerly courses, they were given a considerable set by the wind and sea then existent. The CENT LSTs rolled heavily in the trough of the sea causing a shift of cargo in some ships; this formation was then maneuvered by changes of course and speed to permit shoring of cargo.

11. Thus, when the two sections of NCF-1 passed northward of Gozo, LSTs and LCIs were observed across their approach courses. This resulted in considerable maneuvering by simultaneous ships movements by the combat-loaders, particularly by the CENT Force which maneuvered along the meridian 14° East until 1953 when northeasting was begun at standard speed to get on

proper approach track which was reached at 2050. Meanwhile the DIME Force increased speed to make up the loss of time but the LSTs and LCIs were unable to maintain position in the heavy seas, and gradually fell behind the combat loaders. For simplicity of navigation and ease of handling, the DIME Force approached in a single column of two cruisers and eleven transports flanked on one side by a column of LCIs and on the other by LSTs; due to straggling these columns became inordinately long.

12. At 2305 one division of the CENT Force was further delayed by the transport THOMAS JEFFERSON which stopped for twelve minutes to lower and cast adrift a support boat. The four ships astern of the JEFFERSON also stopped to maintain position on the ship ahead.

13. There was no difficulty in the approach to the initial transport areas due to the paucity of distinctive landmarks on shore or the rolling nature of the terrain behind the shoreline. Navigation was greatly simplified by

- (1) The accurate fix off Gozo with a short run of about fifty miles thereafter,
- (2) Judicious use of the SG radar in conjunction with
- (3) the supersonic fathometer and
- (4) dead reckoning tracer.

14. The SG radar picked up land at 22,000 yards and from thence on was a good navigational aid. The Beacon Submarine served as a final check and enabled ships to move into assigned positions with accuracy.

15. In spite of ragged station keeping and adverse weather conditions the CENT forces reached the assigned area at 0040 and the DIME forces at 0045.

16. The landing ships and craft made best of way to the assigned initial areas and were able to land on the beaches when required.

17. The planning and execution of the approach from the standpoint of navigation and seamanship left nothing to be desired and was one of the highlights of the operation.

Section IV — BEACON SUBMARINES

1. Three British submarines were employed in the operation: HMS SERAPH (CENT); HMS SHAKESPEARE (DIME); HMS SAFARI (JOSS). Prior to departure from North African ports, each submarine operated briefly with the escort vessel with which it was to effect rendezvous during the approach phase of the operation. These exercises were conducted in the Oran, Algiers, and Bizerta areas.

2. These submarines took up offensive patrol stations in a prescribed operating area in the Gulf of Gela on D minus three. While patrolling on station these submarines observed nightly displays over land of aircraft flares, anti-aircraft gunfire and bomb flashes. Low-flying aircraft and aircraft flares forced SERAPH and SHAKESPEARE to dive during the early morning of D minus two. On the night of D minus two, SERAPH, while trying to lay a type FH-830 buoy, was interrupted by an enemy E-boat, necessitating a quick dive.

3. All ships were on assigned stations as required. The SERAPH was contacted by destroyer COWIE at 2318 on D minus one; the SHAKESPEARE was contacted by destroyer COLE at 2215 on D minus one; and SAFARI was contacted by the destroyer BRISTOL at 2230 on D minus one.

4. All submarines made retirement under escort according to plan, reaching Malta on D day. Escort of SERAPH picked up survivor during early morning of D day who turned out to be an American soldier who had fallen overboard from a transport. As SAFARI was leaving station near Licata under escort of PC-543, this submarine had two sticks of bombs dropped near her by JU-88s. No damage was suffered.

5. Although the Task Forces had been deliberately routed to enable them to obtain a sure navigational fix four or five hours prior to reaching the assigned initial transport areas, and in spite of the valuable navigation aid available in the modern radar equipment, it was decided to employ Beacon Submarines to ensure accurate location of the transports off the assault beaches. In the Gulf of Gela, where the CENT and DIME forces were somewhat cramped for sea room, it was deemed essential that these forces be accurately fixed and mutual interferences avoided.

6. The employment of Beacon Submarines should be dependent upon attendant circumstances in each instance. In areas of strong or variable currents, or where no landfall is available from

which to make the approach, or where no distinctive landmarks exist for radar fix, the Beacon Submarine is of inestimable value. By placing submarines on station several days in advance of the assault, these vessels can conduct reconnaissance of selected landing beaches, land amphibious scouts, observe enemy defense activities on shore, such as placing of barbed wire, machine gun pits, etc. A patrol of the area can locate enemy mine fields, observe coastal traffic and routes habitually followed through enemy mine fields, and can determine the extent of enemy coastal patrols all of which may affect the entry of our forces into those waters. It is essential, of course, that such information as is gained by submarines on station patrol be made available to the Task Force Commander prior to or upon his arrival in the assault area.

7. Where the circumstances dictate the withdrawal of the Beacon Submarine before the assault, use can be made of various types of buoys laid by the submarine as navigational aids to the approaching assault forces.

Section V — THE LANDING

1. The Western Task Force, (U.S. Seventh Army), was firmly established ashore over beaches in southern Sicily by the Western Naval Task Force. Army forces in assault were composed of three reinforced divisions, of which the 1st and 45th Infantry Divisions reinforced formed the Second Corps and were landed over beaches in DIME and CENT areas, respectively; and the 3rd Infantry Division reinforced which was landed over beaches in the JOSS area. Army forces in floating reserve were one Regimental Combat Team from the 1st Infantry Division and one armored Combat Command from 2nd Armored Division.

2. Army forces and beaches, DIME assault.

In the vicinity of Gela, two Ranger Battalions and two Regimental Combat Teams comprising the 1st Infantry Division reinforced, less one RCT, (DIME Force), were landed in assault. The Ranger Battalions were landed over beaches in front of Gela in LCVP's and LCA's; one battalion having been embarked in the Attack Transport U. S. S. DICKMAN, and the other embarked in two British LSI(L)'s, the PRINCE CHARLES and PRINCE LEOPOLD. The reserve for the Ranger landing was a Combat Engineer Battalion in three LCI(L),s. Two Battalion Landing Teams, respectively from each Regimental Combat Team, were landed in assault in LCVP's from Attack Transports, (APA and XAP) over assigned beaches. The third Battalion of each Regimental Combat Team, was in regimental reserve for its own RCT, and was embarked in eight LCI(L)'s.

The DIME assault beaches and assigned Army forces were as follows, reading as from West to East, total frontage approximately 8,800 yards:

<u>Beach</u>	<u>Forces</u>	<u>Transport</u>
RED	1st Ranger Battalion	DICKMAN
GREEN	4th Ranger Battalion	PRINCE CHARLES
		PRINCE LEOPOLD
YELLOW	1st Battalion, 26th RCT	BARNETT
BLUE	2nd Battalion, 26th RCT	LYON
RED 2	2nd Battalion, 16th RCT	THURSTON
GREEN 2	1st Battalion, 16th RCT	STANTON

3. Army forces and beaches, CENT assault

In the vicinity of Scoglitti, three Regimental Combat Teams comprising the 45th Infantry Division reinforced, (CENT force), were landed in assault. Two Battalion Landing Teams from each Regimental Combat Team were landed over assigned beaches in LCVP's having disembarked from APA's and XAP's. The third Battalion of the 180th Regimental Combat Team acted as reserve for the Second Corps. The Third Battalion of the 179th Regimental Combat Team acted as reserve for the 45th Division. The third Battalion of the 157th Regimental Combat Team acted as reserve for its own RCT. These reserve Battalions were embarked in the XAP FREDERICK FUNSTAN on the West, the XAP FLORENCE NIGHTINGALE in the center, and the APA BIDDLE on the East, respectively of the 180th, 179th, and 157th Regimental Combat Teams, in that order.

The CENT assault beaches and assigned Army forces were as follows, reading as from West to East, total frontage approximately 25,000 yards:

<u>Beach</u>	<u>Forces</u>	<u>Transport</u>
RED	1st Battalion, 180th RCT	CALVERT
	2nd Battalion, 180th RCT	NEVILLE
GREEN	2nd Battalion, 179th RCT	DOROTHY DIX
YELLOW	1st Battalion, 179th RCT	LEONARD WOOD

<u>Beach</u>	<u>Forces</u>	<u>Transport</u>
BLUE	As assigned, during the follow-up.	
RED 2	As assigned, during the follow-up.	
GREEN 2	2nd Battalion, 157th RCT	THOMAS JEFFERSON
YELLOW 2	1st Battalion, 157th RCT	CHARLES CARROLL
BLUE 2	As assigned, during the follow-up.	

4. Army forces and beaches, JOSS assault.

In the vicinity of Licata, one Ranger Battalion and three Regimental Combat Teams comprising the 3rd Infantry Division reinforced, (JOSS Force), were landed in assault. The Ranger Battalion was landed over assigned beaches in LCA's; having been embarked in two British LSI(S)'s, the PRINCESS CHARLOTTE and PRINCESS ASTRID. Two Regimental Combat Teams were landed in column of Battalions, the assault Battalions, respectively landing in LCVP's, having embarked in LST's; the following Battalions, in each case landing in LCI(L)'s. Two Battalions of the third Regimental Combat Team were landed in column, in LCVP's; having embarked in LST's. The third Battalion of this Regimental Combat Team was landed, behind the Ranger Battalion, in LCVP's; having embarked in LST's. One armored Combat Command, Combat Command A, Second Armored Division, acted as floating reserve for the JOSS Force.

The JOSS assault beaches and assigned Army forces were as follows, reading as from West to East, total frontage approximately 22,000 yards.

<u>Beach</u>	<u>Forces</u>	<u>Transport</u>
RED	1st Battalion, 7th RCT	Landing Craft
	2nd Battalion, 7th RCT	Landing Craft
	3rd Battalion, 7th RCT	Landing Craft
GREEN WEST	3rd Ranger Battalion	2-LSI(S)'s
GREEN EAST	2nd Battalion, 15th RCT	Landing Craft
YELLOW	3rd Battalion, 15th RCT	Landing Craft
	1st Battalion, 15th RCT	Landing Craft
BLUE	2nd Battalion, 30th RCT	Landing Craft
	1st Battalion, 30th RCT	Landing Craft
	3rd Battalion, 30th RCT	Landing Craft

5. The floating reserve for the Western Task Force, (KOOL Force), was composed of Combat Command B, Second Armored Division, and the 18th Regimental Combat Team of the 1st Infantry Division. These forces were embarked in the CHATEAU THIERRY, the ORIZABA and in Landing Craft.

6. Although the DIME landing has been called "combined landing", that is, ship to shore and shore to shore (landing craft); the CENT landing called ship to shore; the JOSS landing called shore to shore; the initial attack by the assault Battalions was everywhere ship to shore. The assault Battalions were all landed in LCVP's and LCA's; having embarked originally in transports and landing craft. The differences in manner of effecting the landing applied to the reserve or follow-up forces. The three reserve Battalions of the DIME Force were landed in LCI(L)'s, the three reserve Battalions of CENT Force were landed in LCVP's from transports, four of the immediate follow-up Battalions of JOSS Force were landed in LCI(L)'s, and two in LCVP's from LST's.

7. Debarkation.

Shortly after midnight, July 9-10, immediately following the arrival of Combat Loaded transports, British LSI(S)'s, and landing ships in their assigned initial transport and landing ship areas, the debarkation operations began. In spite of poor weather conditions, in all transport areas, the lowering and troop loading of the initial assault wave LCVP's and LCA's was carried out in a minimum of time and with only minor incidents. Ships in DIME and CENT areas experienced difficulty in hoisting out boats because of rough water and swells. CENT Force, being more exposed to the sea, damaged a number of boats and consequently lost time in unloading. DIME Force suffered some damage to boats but little or no delay in unloading. Seamanship displayed was good throughout. It is noted that the time required for clearing the DIME assault waves was, generally, from thirty to forty-five minutes. In Cent area, the time required was greater. For future planning of amphibious operations in the Mediterranean, time given to this operation should probably be an hour with a safety factor to allow for delays due to weather.

8. Forming up on Lines of Departure.

Assault waves formed up first in the assigned transport rendezvous areas in full accordance

with the landing plan of attack and were subsequently escorted, in most instances, by assigned AM's, PC's, and SC's, which acted as landing craft control vessels during the initial assault stages. The control vessels took charge of the assault LCVP's and LCA's at the transport rendezvous areas and escorted them to the designated respective lines of departure. From there, assault boat waves, as directed, proceeded on schedule to their assigned beaches, unloaded troops, retracted as soon as possible, and returned to make a follow-up troop carry as ordered. A distinctive characteristic of the initial attack was the manner in which an order, contained in the basic plan, was carried out. The basic plan expressly directed all forces to "Extend the timing of assault waves to avoid congestion on beaches." In general, this order was well carried out during the initial assault.

9. Landing of assault waves, DIME.

H hour was planned for 0245. The first DIME wave arrived at their beaches about on schedule. Fires at inland targets, started by bombing prior to H hour, aided considerably in identifying the beaches. Initial opposition at Red and Green beaches was light; at Yellow it was heavy; on Blue beaches, light; and over Red 2 and Green 2, opposition was fairly heavy. The surf at the beaches was about three feet high, and together with a strong current and Force 4 Westerly winds, many landing craft coxswains were in serious difficulty with craft broaching on the beaches. The LCI(L)'s, carrying the three reserve Battalions, landed shortly after the LCVP's had gone in, beaching at about 0330. They discharged their troops and retracted without serious difficulty except for LCI(L) 220, which lost her stern anchor, suffered shell fire damage to her port screw, and subsequently broached on the beach.

10. Landing of assault waves, CENT.

Delays in loading assault boats in CENT area prompted the Attack Force commander to order postponement of H hour to 0345 for that Force. The landings were generally unopposed, due to the pre-assault Cruiser and Destroyer shore bombardment. The 157th Regimental Combat Team landed on its assigned beaches, pushed promptly inland, and captured the designated initial objectives ahead of schedule. The 179th Regimental Combat Team, in general, landed on the correct beaches, but experienced delay in movement through the dune area immediately inland because of extensive mine fields. The 180th Regimental Combat Team gained its assigned D day objectives after completing a successful landing. The fact that this landing was not made on the correct beaches did cause some delay in marching and forming up.

11. Landing of assault waves, JOSS.

In the JOSS area, initial attack waves, with a delay caused by bad weather, landed according to plan. All of the landings went forward successfully, and in spite of enemy counterfire on some beaches, and poor weather, Army forces were landed over the correct beaches according to the planned time-interval schedule. Although the attack groups anchored between H-20 minutes and H-90 minutes, it is believed that they were at a greater distance from the beach than the scheduled three and a half miles; thus, the assault LCVP's were required to make a considerable longer run than had been planned.

The Commander JOSS Attack Force, in his Action Report, made the following comment: "The navigational phase of the operation could not have been improved upon. The H.M.S. SAFARI, the BRISTOL and the Patrol Craft assigned this mission deserve the highest praise. It was through their expert navigation that all attack groups were able to attain their transport areas and land at the center of their respective beaches. This was supplemented by the scout boats at Yellow and Green beaches." While there was not much gunfire on Green, Yellow and Blue beaches, considerable artillery and MG fire was met during the landing on Red beach.

12. Non-congestion, assault waves.

Assault boat waves, especially at beaches where due to causes beyond their control it had not been possible to keep to the scheduled H hour, managed to avoid congestion on beaches during the immediate assault by maintaining an adequate time spacing between waves. For future amphibious campaigns, where operationally practicable, some degree of flexibility in executing H hour requirements may be found desirable. In the event that the planned H hour cannot possibly be attained, it may become necessary to set a new H hour thereby altering the time, but not the relative schedule, of pre-assault naval gunfire and arrival of the initial assault boat waves at designated beaches. It may be found feasible to fire some form of aerial rocket or combination of rockets from the vicinity of the Task Force Flagship as a signal to indicate the new H-15 or H-30 minute time reference point to that Task Force. Immediate confirmation of this change by every means available would be an absolute requirement. Available methods of increasing the splendid degree of coordination of naval gunfire with the arrival of assault boat waves should be thoroughly investigated and tested in order to provide the utmost possible protection to the attacking forces.

13. Destruction of beach defenses.

At CENT destroyers were employed to cover and support the landing. Preparatory fire was opened at about H-15. Each fire support destroyer was assigned an area of responsibility which was well covered by 5" projectiles. The fire was lifted just before the first wave landed.

The effect of this close supporting fire was apparent as the 45th Division landed practically unopposed and was able to proceed with the establishment of its beachhead faster than planned.

Pre-assault naval gunfire, where used, on pre-arranged targets and beaches, was extremely effective in destroying enemy beach defenses and constituted a definite factor in reducing the number of casualties and the amount of landing craft damage from enemy local action at the beach landing and unloading points. It is evident that the clearance and neutralization of beach defenses by naval gunfire is most vital to the success of the initial assault. Naval gunfire can efficiently aid in preventing enemy action from pinning the initial troop waves to the beaches on which they have landed.

14. Beach crossings.

The CENT force landed initially on a very broad front and its stores, ammunition, and supplies were distributed initially along several miles of sandy beaches. Exits from these beaches were infrequent, difficult, and mined. Retraction was satisfactory, but breaking surf on outer bar caused a few LCVP's to broach. Several boats were lost on rocks off beaches Green 2 and Yellow 2 and casualties were sustained. Salvage was handicapped by shoal water where tugs could not operate.

LCA's and LCVP's encountered little difficulty in the DIME area. In some eight out of 16 cases the LCI(L)'s used for the reserve battalions of the RCTs were able to beach far enough to permit safe debarkation of troops direct to land. In the other cases resort was had to auxiliary craft such as rubber boats and LCVP's for debarkation. As vehicles began to use the beaches, it was discovered that they were heavily mined, and bulldozers, DUKWs, and other vehicles were lost.

In the JOSS assault area, the Green beaches proved to be the most hazardous, as had been expected. The narrow rocky entrance, the cross sea from NW, and the shallowness of the beach made it impossible to retract or to render assistance to those beached until succeeding waves had landed. Most of these boats were not broached but merely stuck in the sand. LST's had great difficulty unloading at Red beach due to the poor gradient and soft sand. On D day, due to the narrow approaches, LCT's were sent in five at a time to the right flank of Red beach. It was finally decided to unload all LST's at either Yellow or Blue beaches or in Licata harbor.

15. For the purpose of emphasis on certain important characteristics of the amphibious assault landing, from the naval viewpoint, some naval considerations involving night landings and dawn landings are here listed.

16. Night landing

A night attack offers the advantages of:

- (a) localizing the counter action
- (b) opportunity for a series of local tactical surprises at separated localities.
- (c) providing protection of darkness for assault craft and troops that cannot be obtained in any other way.
- (d) making effective small amounts of smoke laid down to screen the approach.
- (e) enemy non-ability to light up the large water and landing areas involved through the use of flares and searchlights.
- (f) increasing the effectiveness of deceptive feints at enemy coastal points not involved in the main assault.

17. Night landing

A night attack offers the disadvantage of:

- (a) difficult navigation and exact location of ships in assault areas.
- (b) boats landing on other than correct beaches.
- (c) difficulty in simultaneously placing assault troops on beaches at exactly H hour.
- (d) prohibiting pre-assault visual signalling except through the use of special devices, which cannot be issued to landing craft.
- (e) enemy parachute flares such as those employed by the German Air Force in CENT area whereby Allied vessels were plainly visible and the only defense was, in this instance, blind firing, using radar.
- (f) intensifying the effect of poor weather conditions, notably fog, swell and high winds.
- (g) nullifying vital phases of the plan of attack in the event of a delay in H hour beyond daylight.

(h) preventing rapid and accurate minesweeping of the approaches.

18. Dawn landing

Dawn landing advantages are:

- (a) boats land at exact beaches.
- (b) H hour is more easily kept.
- (c) visual signalling is available.
- (d) own airforce can more easily intercept enemy attacking planes.
- (e) attack force can use more hours of darkness for approach, can thus carry out a longer approach, may thus come closer to achieving surprise.
- (f) boat maneuvering and troop loading is made less difficult.
- (g) naval gunfire can develop a real effectiveness.
- (h) anti-aircraft defense of the ships offshore is improved.
- (i) identification of own and enemy aircraft is less difficult.

19. Dawn landing.

Dawn landing disadvantages:

- (a) tactical surprise is lost at local beach landings.
- (b) enemy land communications can function better and faster.
- (c) enemy can deploy his forces faster and more effectively in daylight.

20. The dawn landing scheme of attack would necessitate control of own air forces by the Attack Force Commander in order to insure protection of the combat loaders and of the assault boat waves; in order to provide bombing attacks on call on designated assault beaches and enemy strong points; and to give freedom of action in the air over the Attack Force areas.

Section VI — D DAY: H HOUR: SURPRISE.

1. The Appreciation of Force 141, (SSO 17/3 (FINAL)), the document upon which the Highest Echelon Outline Plan was based stated:

"72. To ensure the success of the seaborne assaults, it will be necessary first to neutralize the beach defenses, whether the assault is carried out in darkness, smoke or daylight.

There are three possible methods of neutralization:-

- (a) Naval bombardment.
- (b) Air bombardment.
- (c) Action by airborne troops.

It is considered that the number of ships available and the fact that naval gun power is not designed for land bombardment make the use of (a) unsuitable. The primary role of the air forces will be the destruction of enemy air power and therefore (b) will not be available. Therefore it is essential that airborne troops be used to soften the defenses against which seaborne assaults will be made. This role is of greater importance than the early capture of the airfields."

"73. It is considered that this softening of the defenses is of such vital importance to the whole plan that all possible resources in transport aircraft must be made available to lift the maximum number of parachute troops."

2. After considerable discussion of the most suitable time for dropping paratroops, the following CONCLUSIONS are derived:

"76. (a) Airborne troops are necessary to neutralize the beach defenses, and their maximum employment is required.

(b) Seaborne assaults should take place some two hours before first light.

(c) Airborne troops should be landed preferably in the dark or at dusk in sufficient time and at such a place as to be able to complete their task before the seaborne assault takes place."

"81. To allow the airborne troops to make some use of some moon and to afford the approach to the coastline the cover of darkness, D day should be about 10 July, when the moon is in its second quarter".

3. From the above, the following repetitions are made for the purpose of further comment:
"To ensure success of the seaborne assaults, it will be necessary first to neutralize the beach defenses"

“..... naval gun power is not designed for land bombardment use of [is] unsuitable.”

“..... it is essential that airborne troops be used to soften the defenses against which seaborne assaults will be made”.

“..... this softening of the defenses is of such vital importance to the whole plan

“Airborne troops are necessary to neutralize the beach defenses

4. From the above it will be noted that the softening of the beach defenses by paratroops was vital to the success of the seaborne assaults, and that the dropping of these troops on this mission determined the D day and H hour.

5. The D day was fixed as 10 July and H hour as 0245 i.e., “two hours before first light”.

6. On 21 May 1943 the original Outline Plan was cancelled and a new Outline Plan (generally referred to as The “Montgomery” Plan) was issued. This new plan was not based on new information nor on a new appreciation; it called for a change in the locale of the American troops and eliminated the staggered time of assaults laid down in the old plan. The D day remained unchanged.

7. With the development of the Force 343 (7th Army) Plan, the mission of the paratroops now became

“Land on night of D-1/D in area northeast of Gela.

- (1) capture and secure high ground in that area
- (2) disrupt communications and movement of reserves during the night, and
- (3) be attached to 1st Infantry Division effective H plus one hour on D day
- (4) assist 1st Infantry Division in capturing and securing airfield at Ponte Olivo.

8. Again quoting from the Appreciation:

“Therefore it is essential that airborne troops be used to soften the defenses against which seaborne assaults will be made. This role is of greater importance than the early capture of the airfields.”

9. Thus the mission of the paratroopers in the 7th Army Assault Plan was entirely unrelated to the “neutralization of beach defenses” - - the single feature considered of “vital importance to the whole plan.”

10. The D day and H hour remained unchanged: both of these were unsuitable from a naval viewpoint but had been accepted because the destruction of the beach defenses by the paratroops was “the vital part of the whole plan.”

The date, 10 July, occurred in the second quarter of the moon, on which date the following astronomical conditions obtained (all times Zone minus two):

<u>Date (July)</u>	<u>9/10</u>	<u>10/11</u>
Sunset	2023	2022
Last light	2133	2132
Moonrise	- -	- -
Moonset	0031	0102
First light	0439	0439
Sunrise	0546	0547

11. It will noted in the Appreciation that the selected date would “afford the approach to the coastline the cover of darkness.” An examination of the Astronomical Data above will reveal no such darkness. On the contrary the assault forces were required to make the approach in a brilliant waxing moon which would not set until the vessels had hove-to in the Initial Transport Areas immediately under the coast defense guns of the enemy. These facts were well known to the naval planners who pointed out the fact that the moon phase selected was most unfavorable from naval considerations. The date, however, was not changed because it was reiterated that this phase was most favorable to dropping of the paratroops who were the only means available to “neutralize the beach defenses opposing the seaborne assaults” - - “the most vital part of the whole plan.”

12. The H hour (0245) had been fixed by the fact that it required the paratroops about three hours from dropping time to assemble and carry out their mission of ‘softening the beach defenses.’

Under the Force 343 plan the paratroops were directed to inland objectives in a direction away from the "beach defenses against which seaborne assaults will be made."

13. Since the softening of the beach defenses prior to the landings was so vital to the success of the whole plan, naval planners then proposed the employment of naval gunfire against the beach defenses. This was not acceptable to the Army because it was stated "surprise" was to be achieved in the assault. This was voiced as a "Fundamental Principle of War" which, of course, it is not. It was pointed out that there are many factors militating against our carrying the attack to the enemy shores unexpectedly. A few of these were:

- (a) The conquest of Tunisia placed our forces closer to Sicily than any other Axis territory.
- (b) The recent Allied conquest of Pantellaria, and the Pelagic group of Islands.
- (c) The increased tempo of Allied air attacks with most recent concentration on the air forces of Sicily and the communications of the Straits of Messina.
- (d) The bombing by Allied aircraft of the R. D.F. stations on the Southeastern portion of Sicily. This would obviously direct the attention of the enemy that we desired to render ineffectual his observation facilities in that local area.
- (e) The constant PRU flights made by Allied aircraft over the landing beaches during the months of June and early July. Tracking of these planes would give the enemy valuable information in his G-2 Estimate of the Situation. The presence of low-flying Allied aircraft engaged in taking oblique photographs of the selected landing beaches must become known to the enemy.
- (f) The capture in Sicily of Allied reconnaissance personnel engaged in scrutinizing the beaches selected for landings.
- (g) The redistribution of enemy E-boats and destroyers to strengthen the Sicilian force.
- (h) The concentration of Allied landing craft in Tunisian ports.
- (i) The constant aerial reconnaissance maintained by enemy aircraft over Allied ports and contiguous waters.
- (j) The assault date (10 July) which was in the second quarter of the moon. This phase of the moon was unsuitable from the viewpoint of discovery of the approaching sea forces.
- (k) The H hour required the sea forces to be on approach courses and within 25 miles of the coast at evening twilight where their presence could be detected by enemy shore-based radar, coastal patrol vessels, or enemy aircraft.

14. Since the H hour required that our transports be in the Initial Transport Areas in brilliant moonlight (H-3), the prospect seemed remote that the enemy would fail to observe this concentration of hostile shipping off his shores. It was apparent, moreover, that any illumination of our forces would alert the enemy and disclose our intentions. Further, heavy bombing and the dropping of paratroops having preceded H hour by some three hours, the preservation of surprise was illusory. Under the circumstances existing, it was the naval viewpoint that surprise on the assault beaches was not feasible. It was, in fact, not necessary providing a proper employment were made to exploit the means available to us so as to bring about the effect desired, viz: the rapid seizure of a beachhead.

15. The old-fashioned military concept that naval guns are unsuitable for shore bombardment needs revision. Modern naval guns in cruisers and destroyers are high angle guns capable of ranging on reverse slope targets far in the interior in support of seaborne landings. The firepower in the vessels assigned to gunfire support exceeded that of all the artillery landed in the 7th Army assault. Due to the mobility of these ships, it is possible to bring about a concentration of gunfire on a shore target with greater firepower than is possible with Army artillery which is distributed among the various divisions and hence deployed in various directions upon being landed. Thus there is available to the Army a mobile artillery concentration of tremendous power capable of being exploited to the advantage of the ground forces which require time for consolidation ashore before the full weight of the Army can be brought to bear against the enemy.

16. Initially the proper employment for this mobile artillery (naval gunfire) is neutralization of beach defenses and shore batteries threatening the landing. Where this employment was made prior to H hour, as in the CENT area, the enemy batteries were silenced and the beaches thoroughly devastated, and all opposition at the beaches obliterated, thus enabling the soldiers to step ashore without hindrance. The employment of naval gunfire in the annihilation of German tanks threatening the DIME forces on D plus one day is covered in another part of this report. This incident rep-

resents, however, the effectiveness of naval gunfire against a fast moving target in the hinterland, well back from the beaches, and serves to illustrate the versatility and effectiveness of a weapon hitherto dismissed by military authorities as "unsuitable" for bombardment against shore objectives.

17. In the planing of future amphibious operations a deliberate study should be made of all factors influencing the landing in determining the D day and H hour. This study should examine the advantages and disadvantages of dawn, day, and night landing with due regard to the factors affecting all services participating in the operation. The soundness of this observation is self-evident.

18. Paratroop transport aircraft might well be grounded by weather conditions and yet this plan was stated to rest upon their employment for a definite mission. This mission was never executed. In the Western Task Force area the paratroops landed in a strong northwest wind causing many to land in regions remote from the dropping zone. It is questionable whether the effectiveness of the airborne troops was commensurate with the importance ascribed in the selection of the date, particularly in view of the mission assigned them in relation to the beach assaults.

19. In the selection of D day and H hour, the naval implications should be given more consideration by all the interested services. It should be recognized that while the assaulting troops are embarked in transports and craft they are virtually impotent as a fighting force. The troops must be safely landed in accordance with the Plan of Attack, deployed on shore, and be provided promptly with their arms, ammunition, and combat logistics before the Army can function as a fighting organization. It follows, therefore, that the selection of the D day and H hour unfavorable to the seaward assault from a naval viewpoint might well lead to disaster.

Section VII — CONTROL VESSELS.

1. The Commanders of DIME, CENT, and JOSS Forces assigned, in their operation plans, general tasks to control vessels, which tasks were in agreement with the Basic Plan and Standard Operating Procedure (AFAP). In each area the respective plans provided a primary and a secondary control vessel. Thus; the primary control vessel regulated the shoreward movement of the first and second boat waves, the secondary control vessel accompanied the third and fourth waves and the tertiary control vessel, where one was assigned, led in the fifth and sixth boat waves.

2. Task Force Commanders made assignment of control vessels as follows:

JOSS:

GAFFI	2 PC	2 SC
GREEN	2 PC	2 SC
SALSO	1 PC	3 SC
FALCONARA	1 PC	3 SC

DIME:

SECTION I	2 PC	2 SC
SECTION II	1 PC	3 SC
SECTION III	2 PC	1 SC

CENT:

LEONARD WOOD	1 PC	1 AM
FLORENCE NIGHTINGALE	1 PC	1 AM
STANTON	1 PC	1 SC
THURSTON	1 PC	1 AM

3. Task Force Commanders of DIME, CENT, and JOSS Attack Forces, in their reports agreed that control vessels, generally, took charge of assault boat waves as planned, escorted them in good order to the respective lines of departure and released them to the true beaches. The fact that some waves did not meet the assigned H hour did not materially interfere with suitable time-spacing between the arrivals of initial assault waves on designated beaches.

4. Control of landing ships, craft, and boats, after the initial assault, was not entirely satisfactory at all beaches. In some instances boat traffic was governed by a beachmaster who had no means of water transportation assigned to him. At beaches where an SC or LCI(L) acted as craft and boat traffic controller, the unloading of ships was greatly expedited.

5. In order to carry out the general tasks assigned by Standing Operating Procedure (AFAF), a landing craft control vessel, possessing the following features, should be made available.

- (a) Gyro Compass
- (b) Radar
- (c) TBS or TBY
- (d) Bull-horn or directional loud speaker
- (e) Fathometer
- (f) Light armor and armament
- (g) Diesel engines
- (h) Provision made for carrying smoke
- (i) Signal bridge and flag hoist

6. There should be far greater emphasis placed upon the training of control vessels officers. In the ship to shore movement it should be made clear that control of the initial assault waves and traffic control of the unloading process is one of the most important operations in amphibious warfare. Second only to naval gunfire support, control vessels are vital to the success of a landing operation. The larger the task force, the more important become the requirements of control vessels. Control vessels should be a permanent integral part of any amphibious force. They should be assembled for training along with the entire force during the earliest stages of training prior to an operation, in order that control vessel officers can become thoroughly indoctrinated in ship to shore assault and follow-up operations.

7. Western Naval Task Force Operation Plan No. 2-43 contained three assumptions which affected the dispositions, assignments and operation of control vessels: "(1) That the initial landing will take place during darkness. (2) That weather conditions will permit landing through the surf on designated beaches. (3) That false beaches will not preclude the landing ships and craft from landing on the true beaches."

8. This plan contained directives to the DIME, CENT, and JOSS Attack Forces to establish assigned Army Forces ashore near Gela, Scoglitti, and Licata, respectively, by simultaneous attacks on selected beaches at H hour on D day in accordance with plan of attack developed by Commanding General concerned.

9. The plan, furthermore, contained orders to all forces to: "(1) Extend timing of boat waves to avoid congestion on beaches; (2) clear landing ships and craft promptly in order to ensure prompt follow up; (3) to provide adequate escorts. (4) Employ smoke to fullest extent for defense against enemy action and to screen own operations."

10. Approach Plan, Annex J to Operation Plan No. 2-43, contained directives to DIME, CENT, and JOSS Attack Forces, stating that, on arrival in the initial assigned transport area, subsequent movements were as directed by CTF 81, CTF 85, CTF 86, respectively.

11. Landing Operations Doctrine (FTP 167) defines the control group as follows: "The Control Group, consisting of vessels designated to guide and assist the movement from ship to shore, provide communication facilities with the boats and troops while enroute to the beach, and to assist in controlling the supporting naval gunfire. Certain vessels of this group may be utilized at convenient times to lay smoke screens, assist in furnishing fire support, etc."

12. Standard Operating Procedure (AFAF) assigns the following general tasks to control vessels:

- (a) Control the movement of landing craft from the boat rendezvous area of the assault transport to the beaches through the line of departure for beaches.
- (b) Protect the landing craft from attack.
- (c) Assist in control of naval gunfire.
- (d) Act as fire support group if armament permits.
- (e) Communication relay vessel to Boat Group Commanders and landing beaches.

13. It is noted that plans of Task Force Commanders did not contain uniform directives to control vessels nor were the directives, in all cases, in accord with Landing Operations Doctrine. I recommend that planning in future operations should give emphasized consideration to the further assignment of tasks to control vessel groups principally in connection with gunfire support of landing craft, assistance in the control of naval gunfire, and communications between Boat Group Commanders and landing beaches. These tasks should be performed by the landing craft control vessels to as great an extent as possible compatible with the primary and basic task, which is, "To control the movement of landing craft from the boat rendezvous area of the assault transport to the beaches through the line of departure for beaches."

Section VIII — TRANSPORTS

Combat Loading:

1. The CENT transports, with the 45th Infantry Division embarked, were loaded in the United States. Loading was accomplished at Hampton Roads and the only reloading done in these ships was that incident to rehearsals held in late June.

2. The DIME transports, with the 1st Infantry Division embarked, were loaded at Algiers. Craft carrying heavy equipment of the CENT, DIME and KOOL Forces were loaded in Algerian ports and staged to Tunis. The JOSS craft were loaded at Bizerte. LCI's of all forces were staged to Sousse.

3. The greatest difficulty experienced in loading transports occurred at Algiers. Perhaps the foremost of these difficulties was the absence of an authoritative central agency with a complete knowledge of all loading plans, priorities, etc., and capable of rendering decisions. Thus at Algiers the following organizations attempted to exercise control:

- (1) The 1st Infantry Division.
- (2) The Mediterranean Base Section, ASF(SOS).
- (3) The British Naval and Military Port Authorities.
- (4) The 384th Port Battalion.

None of these agencies had a complete and authoritative plan of what was to be loaded or where. The Transport Quartermasters' problems were made insurmountable as various units of organizations such as the Chemical Warfare Service, Signal Corps, Ordnance, Engineers, and other activities descended upon the ships to obtain space therein for their special equipment, no record of which was in the possession of the TQMs. During the loading of the ships many changes were made in the military loading plans; this seriously delayed the formulation and distribution of the Boat Employment Plans of the Transport Division Commanders.

4. Equipment definitely of garrison type, commissary gear, field kitchens and fuel, Bailey Bridging, barracks bags, administrative gear, and similar materials, obviously non-essential to the seizure of a beachhead, were crowded into the transports. Vertical loading was not adequately carried out to fully meet the demands from shore during the assault; this was particularly noticeable in the case of anti-tank weapons which were loaded in such manner as to be too inaccessible for prompt unloading upon call. All of these deficiencies are capable of correction.

5. Recommendations:

(a) That the G-4 section of the Army Division concerned keep a functioning loading and unloading office in the Flagship of the Naval Task Force Commander until all assault transports are unloaded.

(b) That this office have complete knowledge of the location of materials loaded and be constituted as the controlling authority insofar as matters of Army decision are concerned.

(c) The Combat Loading plans including those for troops be complete, receive the approval of the Naval Task Force Commander as well as the Army Commander concerned, and that once loading has commenced these plans are not to be changed without their specific approval in each case.

(d) That TQMs be regularly assigned to each APA, XAP, and AKA to ensure this officer has thorough knowledge of the ship's cargo spaces, etc., with particular reference to hazardous and inflammable materials.

(e) That materials loaded in the assault ships be limited to those required by the assault.

(f) That pallet loading be studied with a view to wider use.

Debarkation and Unloading:

6. In order to provide additional boats, most ships carried four to six extra boats swung on the booms, griped in ready for lowering. Boats were preloaded as far as possible in order to save time. In other ships, where the booms were not carrying these extra boats, prompt steps were taken to hoist out nested boats as the ships made close approach to the Initial Transport Areas. Due to the heavy swell running, many ships experienced difficulty in controlling these lifts and, in some cases, it became necessary to lower and cast adrift these craft in the interest of speeding up the debarkation. After arrival in the assigned areas, sea conditions continued to hamper the unload-

ing of the assault waves due to the difficulty in handling heavy weights aboard ship and loading of waterborne boats. Several derangements of cargo handling gear occurred. The sea condition were most unfavorable in the CENT area and this factor, more than any other, contributed to the delay of the H hour in that force. Some ships reported that delays were introduced in loading the assault wave boats by the removal of slings from vehicles. This could have been eliminated by providing sufficient slings for each assault loaded vehicle, leaving the sling in the boat when the vehicle is lowered to the boat. A shortage of nets developed in some ships; each APA, XAP and AKA should be provided with 30 extra nets, thus permitting the nets to be left in the boats until the return of the boats from the beach.

7. Much of the cargo gear now installed in combat-loaders was designed for discharge of cargo alongside a dock or in harbor waters — a condition not likely to be met during an amphibious operation. The extent to which weather conditions interfered with the unloading of the assault waves, indicates the necessity of a thorough study of the present facilities now available in these vessels for lowering and unloading boats. Special attention should be given to the strengthening of deck fittings, providing means of handling heavier steadying lines, installation of stronger boom guys, strengthening of boat cleats, as well as the strengthening of Welin davits to provide an adequate safety factor for rail loading.

8. In the DIME area, where sea conditions were moderate, all boats were lowered clear of the ships from 30 to 45 minutes after reaching the Initial Transport Area. In the CENT area, where weather conditions were more severe, this operation required from 30 minutes to 6 hours, though the average time was about 2 hours.

9. Owing to the stranding of boats incurred in the initial landings, fewer boats were available for subsequent unloading of the transports. This was foreseen and provided for in my plan by the automatic shift on D day of LCTs from the JOSS area as soon as these craft had unloaded in the assault flight. Twelve LCTs were thus made available to the DIME transports and fourteen to the CENT combat-loaders during the forenoon of D day. These LCTs proved to be invaluable in the unloading of APAs, XAPs and AKAs. Factors which recommend them to this task are: (a) ease of handling, (b) ease of loading vehicles and cargo, (c) good beaching qualities, (d) in some craft, double crews were aboard. Although LCTs enabled the unloading of the transports, and particularly the AKAs, to be greatly accelerated, these craft encountered serious difficulty in trying to unload expeditiously at the beach due to the inability of the shore party to handle the volume of stores and equipment thus placed on the shoreline. As a result, most LCTs were unloaded by the crew of the craft in order that the craft could stand clear of the beaches which were under almost constant daylight attack by enemy aircraft during the first three days of the assault. When unloading into LCTs, the "hatch crews" should be increased and at least 20 soldiers placed in each LCT to unload when the craft is beached.

10. Some LSTs, after discharging their initial lifts, were pressed into service to assist in unloading the combat-loaders. These LSTs thereby aided in expediting the departure of the assault transports, though it was recognized that the type is not suitable for this work. Not only does the structural arrangement of the LST render it unsuitable for receiving stores from a ship alongside, but the task of unloading the bulk stores after beaching places a tremendous burden upon the crew of the LST. These crews were taxed with this arduous job because of the unavailability of labor and transportation at beaches, and as long as the LSTs remained beached they were selected targets for enemy air attacks.

11. LCIs were employed to a limited extent in carrying troops from APAs and XAPs to shore. Although LCIs are suitable for such lifting of personnel, they are of little use in the transport of stores and equipment and should not be used for such employment except in an emergency.

12. LCMs, next to LCTs, are the most suitable type of craft for unloading combat-loaders. One LCM is considered to be the equivalent of five LCVPs. Each LCM should carry 4 to 6 soldiers on each trip to handle stores at the beach.

13. LCVPs make a small impression in the task of unloading numerous vehicles, and a vast quantity of ammunition, gasoline, and stores. Owing to the limited capacity of this boat, many trips are required to move any great quantity of supplies; thus prolonged operations require a large reserve of boat crews to meet the problem of operational fatigue. From a design viewpoint it is a reliable and rugged boat but, upon beaching, it must be promptly unloaded or broaching or swamping will quickly result. A large number of craft stranded while waiting to unload on beaches, though most boat crews unloaded the boats themselves. Many transports reported that their boats were ordered away from congested beaches and ordered to return to their ships without unloading.

Where this occurred ships placed working parties of bluejackets, taken from the ships' gun crews or engineers force, and sent them in with the boats to unload them; in the future at least 2 soldiers should be placed in each LCVF to help in unloading at the beach. Other boats, when ordered from congested beaches, ran along the shoreline until a suitable clear spot could be found where the boat was beached and unloaded. This, of course, resulted in some equipment and stores being landed in the wrong area.

14. DUKWs were loaded in LSTs and LCTs for the initial employment of augmenting ships boats in unloading the combat-loaders. After the first trip to shore, few DUKWs returned to the ships for further loading, having been diverted by the Army for employment on shore; this was particularly noticeable in the DIME area. Such diversion not only interrupted the unloading plan, but many DUKWs were lost or suffered accidents on shore which rendered them useless for further employment as seaborne carriers. These units are limited to a lift of about 8,000 pounds but, if available in adequate numbers and the transports are comparatively close to shore, a considerable quantity of stores can be moved in time. However, if the water haul from transports to shore is a long one, it is more satisfactory and rapid to employ LCTs rather than DUKWs, providing of course that the shore party promptly unloads the craft upon beaching. DUKWs were employed successfully in unloading LCTs through bulwark ports while unloading over the bow ramp was proceeding concurrently.

15. The size of the Army Unloading Details placed aboard combat-loaders should be increased, and particularly where the plan calls for use of LCTs in unloading. These troops should be assigned in sufficient numbers to provide relief crews in all holds in order that the unloading may continue around-the-clock. Unless great strides are made in ensuring prompt unloading of craft and boats at the beach, additional troops must be provided as working parties in the craft and boats. The fighting efficiencies of ships must not be weakened by the depletion of ships' gun crews or the engineer force to accomplish this task on shore. This is a problem deserving of close attention by the Army and one which must be met, even at the expense of some reduction in fighting troop lift.

16. Unloading was interrupted and seriously delayed by the numerous air raids and alerts which occurred day and night while the transports were in the assault area. The practice of calling all hands to General Quarters, when radar reports unidentified aircraft, appears to require modification. Some vessels established a Condition IV which provides sufficient officers to control and sufficient crew to fire all guns in the ship from ready boxes, thereby permitting uninterrupted unloading provided no alarm is sounded and guns are alerted over the control circuit only. When these ships were subjected to surprise attacks it was found that Condition IV met the attacks as effectively as could be done under Condition I. While transports are unloading in transport areas, this Condition IV should be standard doctrine even during air raids unless air attacks are in such strength or of such duration as to require implementation or replacement of gun crews stationed under Condition IV.

17. Summarizing, the principal causes of delay in unloading the combat-loaders were:

- (a) unfavorable sea conditions;
- (b) insufficient slings and cargo nets;
- (c) derangements of cargo handling gear;
- (d) stranding of boats on shore;
- (e) shortage of boats and craft due to delay in unloading boats and craft at beaches;
- (f) insufficient labor in the Shore Party to unload boats;
- (g) too frequent General Quarters during alerts and air raids;

All of the above, except (a), are capable of correction.

18. The loading of ships varied widely, the APAs carried from 52 to 120 vehicles, XAPs from 100 to 157 vehicles, and AKAs from 110 to 200 vehicles. The CENT combat-loaders carried 21 days maintenance for the troops embarked in the United States, the DIME assault vessels were loaded with 7 days maintenance for the troop units embarked. The actual tonnages of stores varied widely, ranging from about 450 to over 1000 tons in different ships. Pallet loading of some stores greatly facilitated cargo handling. Unloading target times of ships varied considerably and, in the actual unloading, due to delays incurred from various causes, the time required exceeded the estimates about 30%. The average number of boat trips per ship was about 275, this varying with the employment of different types of craft. AKAs will always lag behind APAs and XAPs, and hence must be favored in the allocation of boats and craft for unloading. In spite of the delays due to weather, enemy action, and other causes, the DIME combat-loaders were unloaded in an overall time of 60 hours, twelve of the CENT force in 63 hours, and the remaining seven vessels

at CENT in 88 hours. Due to the complete stoppage of all unloading for many hours caused by beach congestion, the actual time during which unloading operations were underway was less than the figures given herein. With vessels loaded only with essential assault weapons, equipment, and stores, in precise conformity with the standard procedure governing combat-loading, and discharging over properly organized beaches, it is estimated, neglecting enemy action, that a military force of two reinforced infantry divisions can be firmly placed ashore in 48 hours.

19. Recommendations:

- (a) That a study be made of cargo handling gear of combat-loaders with a view to strengthening as required to meet stresses experienced in unloading in moderate weather at sea.
- (b) That slings be placed on all vehicles to be unloaded in assault waves.
- (c) That each vessel be provided with 30 extra nets.
- (d) That where available LCTs be used to the fullest for the unloading of ships.
- (e) That LSTs be not used to unload ships.
- (f) That the size of the Unloading Details ("Hatch Crews") assigned by the Army be increased.
- (g) That a standard Condition IV be adopted in combat-loaders which will enable unloading to proceed without interruption during alerts and air raids.

Boat Crews

20. In considering the large number of boats stranded or capsized in the initial assault waves, it must be recognized that the combination of the notorious characteristics of the beaches and the high cross-surf running required a greater skill on the part of boat coxswains than the majority of them possessed, for the most skillful surf-boatman would have found the problem of safely beaching the loaded craft a difficult one.

21. Training of boat crews is an ever-present requirement; it is indicated that training must emphasize night and bad weather landings of loaded boats, and training in retraction and salvage methods. Relief boat crews require as much training as regular crews; this is important.

22. More information should be given boat crews regarding what will take place in their area from time of arrival in Initial Transport Area until daylight. Boat crews should be repeatedly briefed on the ship-to-shore movement of the attack Plan, with full information regarding beaches, landmarks, silhouette and perspective views presented during boat approach to beach, etc. Boat Group Commanders and Boat Officers in the assault waves should be experienced officers of the highest available rank. The lines of organization of the boat division, group, and if necessary, flotillas, should be clearly drawn and the responsibility and authority of Commanders kept alive.

23. Boat discipline can stand improvement. There were cases of too hasty abandonment of boats which were in trouble at the beaches. Some of these crews remained on shore where they set up machine guns removed from abandoned boats.

24. In general the boat crews performed a Herculean job. Due to the early losses of boats, a heavy strain was placed thereafter upon those craft still operational. This became aggravated when boats were diverted to beaches remote from their own beaches. The fact that boat crews unloaded their own boats at the beaches, in order to effect retraction before becoming stranded, is indicative of the tremendous job accomplished by the transport organizations.

Smoke Laying

25. Transports were lax in the employment of smoke during air alerts and attacks. The suddenness of many of these enemy air attacks, which sometimes were delivered without warning, contributed to this situation. The proper employment of smoke by transports is discussed elsewhere in this report, under the title "Smoke." Greater attention should be given to smoke in future operations.

Section IX — LANDING CRAFT

1. With the capture of the Tunis-Bizerta area on May, steps were taken without delay to establish sites for advanced bases in that area from which all types of landing craft could base, undertake amphibious training of troops, and embark the required forces and equipment for the forthcoming operation. The devastation in this area, wrought by allied bombings and axis sabotage, was wide-spread. Sunken ships, demolished wharfs and quays, wrecked fuel storage facilities, and destruction of public utilities imposed an enormous job of salvage and repair to restore

these areas to a condition suitable for military purposes.

2. While reconstruction work progressed and base facilities were being installed, the 3rd Infantry Division was made available for shore to shore training and plans for the shore to shore movement had to be developed. The details of this training had to be created, for the landing craft were of new types, untried in battle, and no technique for their employment was known to exist. Few in the Army had even seen the landing craft, while in the Navy the limitations of the various types had been determined only through trials and experiments. It became necessary, therefore, to evolve a technique which would meet the requirements of an amphibious assault on hostile shores. Operational features, such as speed of beaching, best beaching trim, most suitable methods of debarking troops and vehicles, most effective procedure for retraction, loads vs draft for each type of craft, and similar details had to be determined during the training phase. As these elements became known they had to be correlated in order that they might form a basis for the formulation of attack plans. The known characteristics of the beaches in the Gulf of Gela, Sicily, required that some means be developed to bridge the gap between the grounded LST and the shore line. Extensive trials were held to determine the relative merits of Army treadway bridges vs Navy pontoon causeways on beaches having gradients comparable to those in Sicily selected for assault. As a result of these tests, a method of carrying the pontoon causeways to the scene of the invasion, and of erecting them on the enemy shores, had to be devised.

3. As a result of these well carried out investigations, ten LSTs were altered to provide for side-carrying of one complete causeway each. Another LST was converted into an auxiliary aircraft carrier for the transport and launching of the Army Cub spotting planes; still another was modified to carry the GCI equipment essential to the control of Fighter aircraft in the assault; others were provided with means for pumping fuel and water to shore tankage. Facilities were installed in some ships of this type to render them available as hospital ships for the evacuation of casualties. The most far-reaching innovation, however, was the utilization of the six-davit LST. Thirty-six LSTs were thus able to carry six LCVPs in davits, thereby permitting each craft of this type to embark one company of infantry for the initial assault in LCVPs, the ship later landing on the beaches to discharge the vehicle lift. This specially-fitted craft thus had a marked influence upon the development of the shore-to-shore technique.

4. Acceptable methods having been devised, it became necessary to develop detailed plans. Since no "assault scales" or "light scales" of equipment and vehicles had been developed by the Army for this type of movement, and since the loading of craft was limited by beaching draft, the lessons of troop training shaped the pattern of the military and naval plans.

5. Confronting the Commanders was also the task of developing an organization, a plan, and the vast facilities needed to meet the requirements of embarking 130,000 troops and loading 30,000 vehicles and 20,000 tons of ammunition and supplies in the 250 odd craft envisaged in the joint plans. Since such an undertaking had never before been attempted, there was no past experience upon which to draw guidance.

6. The establishment of a "Port of Embarkation" to meet this enormous task meant that the natural facilities of the Bizerta-Tunis area must be greatly augmented. The naval requirements of such a port include:

- (a) Sites protected from the open sea.
- (b) Minimum interference with normal port operation.
- (c) Minimum restrictions on naval operations.
- (d) Suitable hydrographic conditions for craft.
- (e) Adequate berthing space for craft at loading points.
- (f) Fuel and water lines at craft berths.
- (g) Adequate lighting for night loading at loading points.

Military requirements include:

- (a) Suitable concentration area for units within ten miles of loading points; facilities for initial waterproofing of vehicles.
- (b) Suitable staging areas; facilities for final water-proofing of vehicles.
- (c) Suitable assembly area to permit necessary vehicle segregation.
- (d) Suitable loading areas with adequate road nets to each loading point.

In meeting the above requirements new construction had to be held to a minimum due to shortages of time, labor and material.

7. Through the co-operative efforts of Commander Landing Craft and Bases, Commanding General 3rd Infantry Division, Commanding General Eastern Base Section SOS, and Commanding Officer 1st Embarkation Group, EBS, the sites were selected, necessary facilities provided, and the tremendous loading job effectively and efficiently carried out.

8. Based on the experience gained in the launching of this, the first shore-to-shore assault, certain conclusions can be drawn regarding the loading and unloading of these types of craft. In the preparation of the Army plan, it is necessary that TQMs exercise the same precise investigations as in loading combatant transports. It is necessary, therefore, that TQMs inspect the ships and craft to be loaded and that they spot location of stanchions, deck fittings, structural interferences, etc., which greatly affect the space available for loading. He must determine the characteristics of the craft, the dimensions of space available for loading, and the exact cubic dimensions and weight of each type of vehicle to be loaded. Templates of deck arrangements and vehicles must be prepared and a template-loading worked out in detail. Suitable clearances must be allowed in this template loading to provide for the actual placing of the vehicle under its own power in the position indicated. From the template pre-loading, a prestowage diagram must be produced by the TQM, showing the order of loading necessary to obtain the result so diagrammed. Thus loading numbers assigned to the specific vehicles are derived from the diagram which shows a definite space for each particular vehicle and the loading number in the assigned deck space. A list of vehicles must then be prepared showing the precise order of loading, the serial number, Army organization, etc. Similarly, personnel lists and supply lists must be prepared for each ship and craft. Such stowage plans must be passed on by the Navy to determine if the load affects the stability and seaworthiness of the craft and if beaching draft is exceeded.

9. Preparatory to loading it must be determined that waterproofing of vehicles has been completed in the staging area where vehicles have been segregated into craft loads; under no circumstances should waterproofing be deferred until vehicles are stowed in ships and craft. Troops should be transported from the concentration area to the assembly area by truck, and then marched to the craft at the loading points. In the assembly area vehicles should be arranged in the order of loading as shown in the prestowage diagram.

10. The following wrinkles and results are applicable to the specific type of craft:

LST

(a) Loading

- (i) The main deck also should be template loaded with a view to proper location of the maximum number of A.A. guns (up to 40mm caliber) to provide additional A.A. protection to the ship.
- (ii) In six-davit LSTs the TQMs should not plan to load forward of the elevator ramp (except on the elevator) nor aft of the after intake vents (except on the hatch); vehicles may be loaded on the elevator and light vehicles on the hatch. The capacity of the elevator is 10 tons, hence the heavy vehicles must be stowed in the tank deck.
- (iii) The space between the ladders at the after end of the tank deck is usually utilized for ships' stowage; it should not be included in the TQM diagram as available for Army gear.
- (iv) LSTs may be loaded forward of the point where the bulkhead narrows but tracked vehicles should be loaded to be discharged first, ahead of jeeps with trailers and other wheeled vehicles. If bulk stores are loaded they should be so stowed as to be discharged last.
- (v) The personnel lift of the LST is dependent upon the dead-load carried and the duration of the voyage. Normally 180 bunks are available for Army personnel. A lift of about 350 may be carried if "hot bunks" are used; the maximum personnel lift is 500 but this should not be attempted except for short hauls because of limited messing and sanitation facilities available. The vehicle lift ranges from 40 to 110, depending on types and sizes of vehicles listed. Maximum stores capacity is 1600 measured tons or 1100 weight tons, but this must be reduced considerably if beaching draft of six feet forward and nine feet six inches aft is not to be exceeded.
- (vi) Loading times were:

Personnel	—	1/2 to 1 1/2 hours.
Vehicles	—	1 1/2 hours, if no trailers; 6 hours if a number of trailers.
Stores	—	15 to 25 tons per hour.

(b) Unloading

- (i) Three methods of unloading LSTs were employed: (1) over naval pontoon causeways (2) into LCTs, and (3) into DUKWs.
- (ii) The naval pontoon causeways were brought to the assault area either by side-carry in LSTs or under tow of tugs. Some difficulty was experienced in rigging the pontoons particularly in the CENT area where the surf was high on D day and where considerable shifting of beach sites occurred. Where a current sets along the beach, special care in placing pontoon anchors is indicated. Once pontoons were placed, LSTs were unloaded with dispatch, the average time to unload vehicles being about one hour. Barrage balloons must be placed over both ends of pontoon causeways sited at the beach; pontoons in use by LSTs are special targets for enemy aircraft. A DUKW, manned by the pontoon crew, should be part of the equipment of each LST fitted as a pontoon carrier.
- (iii) Prior to the operation, sections of the bulwarks of LCTs were made portable to permit side loading from LSTs and unloading. In the operation LCTs were found to be very effective for rapid unloading of LSTs which were unable to either beach themselves, or for which no pontoon causeways were available. By this method two LCTs were placed athwartships to the ramp of the LST to be unloaded. Vehicles were driven over the ramp across the first LCT and into the outboard LCT. When this craft was fully loaded, a third LCT was brought alongside in its place and the process continued.
- (iv) DUKWs were employed to a limited extent in the unloading of stores from LSTs; the sole reason they were not more fully employed being that they were diverted by the Army once they reached shore with their first load. DUKWs are particularly suited to the job of carrying stores and their ability to enter the tank deck from sea offers great possibilities in future operations.
- (v) LSTs should be employed principally for carrying armor and vehicles; they are not suitable for transporting stores, particularly in such quantities as to increase the draft of the ships in assault forces beyond that favorable for beaching. In this operation LSTs loaded with from 600 to 1300 tons of bulk cargo were beached for six hours to two days, depending upon the availability of labor and transportation for unloading. It became necessary for the ships' personnel to be called away from their gun and other stations to unload these stores until sufficient Prisoners of War were captured and brought down to the beaches and engaged voluntarily in the labor of unloading beached craft. If in future operations LST are to be employed in carrying bulk cargo, these ships should have installed winches and booms or other mechanical means for discharging stores to boats and DUKWs alongside. It is unsound to load LSTs with stores to be unloaded over beaches; this practice extends inordinately the time of beaching, thus subjecting these immobilized ships to bombing and strafing attacks, and reduces the number of craft available for rapid follow-up movements.

LCT

(a) Loading

- (i) Assault LCTs should be loaded in such manner that tanks and S.P. guns are able to fire during the approach; this requirement should be met even at the partial sacrifice of economy of space. LCTs may be loaded forward of the point where the bulkhead narrows.
- (ii) No living space is available in LCTs and therefore the troop lift should be restricted to vehicle drivers, or about 35 men, who should be loaded at the latest possible hour. If the trip is of short duration and no vehicles are carried, as many as 105 men can be carried.
- (iii) Vehicle capacity is 5 medium tanks or 9 2½ ton trucks plus 2 jeeps. Scorpions are too wide for LCT(5)s. Stores capacity is 200 measured tons or 150 weight tons. Loading time varied from ten minutes to one hour, depending upon the types and numbers of vehicles being loaded, and upon the ability of the drivers concerned. Supplies may be loaded at the rate of 25 tons per hour.

(b) Unloading

- (i) LCTs have ideal beaching qualities and performed well during the operation. The sea keeping qualities are poor and this craft has the disadvantage of a low speed for

convoy employment. This operation tested the seagoing qualities of the craft severely and recommendations concerning strengthening of these hulls appear herein under "Material and Logistics."

- (ii) The utility of the LCT in unloading LSTs and combat-loaded transports is covered elsewhere in this report. In contemplation of this special employment, the crews of most LCTs were doubled prior to the operation. In spite of these measures, the crews of these craft were subjected to severe operational demands throughout the Sicilian campaign.

LCI(L)

(a) Loading

- (i) These craft are solely personnel carriers. The capacity is 188 Army spaces. No vehicles or stores can be carried. Personnel should be loaded as near as practicable to the time of departure; loading time is about 20 minutes. Since this craft is designed to be beached, care must be taken not to have on board excessive amounts of provisions, fuel and water. It has good sea keeping qualities and adequate speed for convoy work.

(b) Unloading

- (i) Providing the proper beaching draft is maintained, this type of craft can be beached without difficulty on most beaches. Recommendations regarding alterations to LCI(L)s are contained herein under "Material and Logistics" and in separate correspondence.
- (ii) LCI(L)s were found to be a very useful type of craft. They were useful in transporting personnel from APAs and XAPs to shore. They were utilized as Task Group Commanders' leaders (Regimental Headquarters Ships) though they were cramped by the quantity of communication equipment essential to this function.
- (iii) As Traffic Control Boats, the LCI(L) is very suitable. Owing to its weight, power, and shallow draft, the LCI(L) is eminently suited for use as a salvage vessel. Recommendations in this particular appear herein under "Beach Party."

Section X — SHORE PARTY

Planning:

1. When the "Montgomery" Plan was adopted by the Commander-in-Chief, Allied Forces, the implications to the Western Task Force were clear. Not only were the beaches inferior for assault but the problem of maintenance reached serious proportions. It was recognized that the beaches south of the Gela River, and particularly those south of the Acate River, introduced unusual obstacles. These beaches were backed by soft sand dunes, with undulations reaching a height of from 40 to 80 feet, for a distance of one-half mile to one mile from the sea. Barren slopes and patches of thick shrub bordered the landward side of these vast dunes. Cart tracks running parallel to the beaches lay between the shore line and the nearest metalled road located from one to three miles from the sea. Exits from the beaches to the hinterland were non-existent.

2. The fact that many beaches were flanked by groups of rocks, and all beaches were bordered to seaward by bars or runnels, presaged difficulties in beaching boats and craft, and in preventing stranding unless unloading was accomplished with dispatch. The locale of the landings thus foretold the need for reinforced Shore Parties, with particular emphasis on road construction units to prepare exits from the beaches, increased motor vehicle transportation to move stores from beaches to inland dumps and to the advancing troops, and finally a greatly increased labor force to quickly unload boats and craft at the beaches. Representations were promptly made to the 7th Army (Force 343) to augment the strength of the Shore Parties in order to meet fully the conditions peculiar to the beaches selected for the landings by United States Forces.

3. The Shore Party organization adopted by the 7th Army consisted of:

CENT Force	—	40th Combat Engineer Regiment (3 Bns).
DIME Force	—	531st Engineer Shore Regiment.
JOSS Force	—	36th Combat Engineer Regiment (3 Bns).
KOOL Force	—	540th Combat Engineer Regiment (2 Bns)

4. The 36th and 540th had landed in North Africa as shore regiments in November 1942; the 40th had arrived in the theater with the 45th Infantry Division and lacked previous shore party experience.

5. The average strength of these Shore Parties (exclusive of the Navy Beach Battalions) was approximately 3900 officers and men. Although the composition varied in detail, the basic organization provided for a Shore Regiment, a Signal Company, an Ordnance Company (MM)(Q), an Ordnance Company (Amm), a Medical Battalion, a Quartermaster Battalion (DUKWs), and a Military Police Company. Augmentation was made for this operation by small detachments of service personnel, such as dump operating details of the various services, railway personnel, gasoline supply troops, and truck companies. The Shore Regiment consisted of slightly over 2,000 men, about 20% of whom were available for unloading boats on the beach.

6. The 7th Army plans governing the employment of Shore Parties provided:

"a. Prior to operations.

The Commanding Officer 1st Engineer Special Brigade is responsible for:

(1) The organization, training, and equipping of all beach groups incident to the operation until such time as these beach groups have been assigned to and joined the Sub-Task Forces.

(2) For the preparation of detailed plans for the operation of all beach groups (such plans to be coordinated with the indicated staff sections Force 343).

(3) Preparation of adequate plans to take over the operation of all supply activities at a date to be designated by the Commanding General, Force 343.

b. During operations.

(1) Initially, beach groups will be under direct command of Sub-Task Force Commanders, and will remain under their command until such time as all supply activities are taken over by the Commanding General, Force 343.

(2) When supply activities are taken over by the Commanding General, Force 343, the Commander 1st Engineer Special Brigade will assume command of the beach groups and all non-divisional and non-corps service units thereto attached and such other service units as are necessary and may be attached by the Commanding General, Force 343; and will be responsible for the execution of all supply plans within the theater of operations and emanating from Force 343, including the operation of ports, if any."

7. Thus, the provisions for Shore Parties in the Assault Forces included one Engineer Shore Regiment and two Combat Engineer Regiments, with a Combat Engineer Regiment of two Battalions in the Floating Reserve—the latter to be landed through a prepared beach. Each of these Shore Parties was, during the assault, responsible to the Commander of the Infantry Division to which attached. Later, these Regiments passed to the Commander of the 1st Engineer Special Brigade who was charged with the execution of all supply plans of the 7th Army from the time the Army assumed control of the situation ashore.

Execution of Plan:

8. That the 1st Engineer Brigade performed a magnificent achievement in the execution of Army Supply plans, after the establishment of the 7th Army ashore, is attested to by the supply statistics in the 7th Army's report on the Sicilian campaign. It is the assault phase of the operation, however, which most vitally affects the combat-loaded transports and it was in this phase that the grief occurred.

9. Smooth, efficient operation of the assault beaches was not accomplished until after the departure of the assault transports from the Gulf of Gela. Beginning on D day, from H hour onwards until D plus 3, beach conditions were chaotic. In the JOSS area the beach situation was rectified more promptly. Boats were arriving at all beaches in such numbers that unloading by the Shore Party was at no beach able to keep pace with the arrival of loaded boats. Many vehicles, upon being unloaded from craft, came to an end on enemy mine fields which had not been located and marked by the Shore Party prior to the arrival of motor equipment. The destruction of these vehicles, and the lack of suitable exits and proper markers to show safe routes for traffic through enemy mine fields, soon created widespread confusion as trucks became blocked on the beaches. DUKWs transiting the beach from seaward also came to grief on the beach minefields, due to

beach limits and safe landing points not being adequately marked so as to be seen from seaward by approaching craft. As boats continued to arrive on the beaches and awaited unloading by the Shore Party, the boats were soon swamped or stranded. Eventually the beaches became crowded with miscellaneous personnel standing around idle. In the absence of properly marked staging areas, troops were observed loitering about on the sand dunes awaiting instructions as to movement. Many boats retracted from the regular beaches and moved to the flanks where a clear beach space could be found, and there the boat crews unloaded their own boats. This led to scattering of Army equipment and stores, in some cases placing material on the beaches of adjacent divisions, thus rendering more difficult the task of supplying the advancing troops. Other boats, unable to obtain shore party personnel to unload them at assigned beaches, returned to their transports still loaded. This resulted in many ship commands taking men from gun crews and engineers force and placing them in the boats as working parties in order to unload boats on the beaches. Finally, the unloading situation became so critical that transports organized working parties from each ship and sent these parties ashore to unload boats and craft. Such parties varied in size from 40 to 100 officers and men. On some beaches these naval working parties were augmented by gangs of Prisoners of War which engaged voluntarily in this labor. In this manner were the combat-loaders and landing craft finally unloaded during the assault phase.

10. Dumps did not appear to be organized according to a predetermined plan. On some beaches there was a critical shortage of transportation, in spite of the thousands of vehicles being landed. Beach personnel migrated to the dumps in loaded vehicles thus depleting the party working the beaches. DUKWs were observed to move far inland well beyond beach dumps where they were diverted or came to grief through accident. Control of transportation on the beaches was totally lacking. There was a notable absence of Military Police on the beaches; these units had obviously moved inland with the troops.

11. Supplies were piled high on the beaches without any effort to accomplish segregation. Gasoline, ammunition, water, food, and assorted equipment were strewn about in a hopeless mass. No fire fighting equipment was in evidence anywhere. As enemy planes made frequent strafing attacks along these beaches, fires were of frequent occurrence.

12. The beach defenses were weak and ineffective. Barrage balloons were insufficient to cover the congested areas and anti-aircraft batteries were not only scarce and of small caliber, but lacked proper fire control.

13. At night the Shore Party personnel were not to be found; they either disappeared in fox holes and dumps, or withdrew to the hinterland. The numerous soldiers idling on beaches during the day made no effort to unload their own equipment out of boats and craft. The discipline on the beaches was of a low order.

14. As the locations of CENT beaches were shifted, the new beaches became as congested as the old. The Shore Parties became scattered and were uncertain of the location of the new beaches. Available man power was not utilized and idlers became numerous. Proper beach markers were not erected. Boats stranded after waiting hours on end to be unloaded. Labor and transportation facilities for handling cargo were lacking. Finally all unloading of the transports in the CENT area ceased until working parties sent from the ships could reach the shore and take over the job of unloading boats and craft.

15. In the DIME area the chaotic condition on D day was terminated on D plus one by the evacuation of those beaches due to the advance of the German tanks. Enemy shelling of these beaches resulted in the Engineer Regiment being called inland as support troops and the withdrawal seaward by boats of other beach personnel. The DIME beaches were at a standstill on D plus one, though some ships diverted boats to the beaches near the Acate River in order to continue unloading. As the enemy threat was overcome, the DIME situation gradually cleared up as naval working parties took over unloading of boats and craft. But the status of supplies landed was not known to the Shore Party, for on D plus 2 the following message was received from DIME Green Beach by the Transport Division Commander in the DIME area: "120955 Col. Massey QMC requests all ships operating this beach send non-perishable food supplies X Army hungry X signed Marler." This, in spite of the fact that practically all ships were completely unloaded and that hundreds of tons of food supplies were available either on Green Beach or those immediately adjacent.

16. The organization and operation of the beaches during the assault phase was one of the greatest difficulties in this operation, as it had been in the Moroccan Operation, last November. The recurring delay in getting boats unloaded after the first few hours of the assault was present

on all CENT and DIME beaches, and to a lesser extent on the JOSS beaches. This condition sets in at the critical period of a landing operation — from about noon on D day to the night of D plus one. It is during this period when our troops have reached inland objectives and are well-engaged with the enemy, when the demands from our troops for ammunition and particular weapons and equipment is greatest, and when we are probably inferior to the enemy in artillery and possibly in infantry, providing he has carried out reconnaissance and has moved his reserves. He will exploit his air power on D day to the utmost and the beaches are the most favorable target the enemy can, and does, select. But it is at this critical period that boat crews and Shore Parties lag, when the beaches become congested, and when there is a grave danger of complete breakdown in the supply system.

Conclusions:

17. It is clear that adequate measures must be taken at once to improve the organization and training of our Shore Parties. Though amphibious operations in the Pacific have been on a much smaller scale than operations in this theater, the Action Reports received from that area relate the exact and precise shortcomings experienced in this theater. This cannot be coincidental; it is believed to be beyond happenstance — to be basic, and hence readily recognized and amended.

18. Since the Allied Nations are, by the geography of the globe, committed to many amphibious operations, the need for Shore Party organizations will be continuous. It is suggested that the cornerstone of these Shore Parties be Shore Engineer Regiments and not Combat Engineers. The platoons for boat labor on beaches should be doubled in strength. These Beach Groups with complete equipment and personnel, should undergo amphibious training with Infantry Divisions, and the Divisions should land over beaches their full equipment, personnel, and vehicles; and considerable quantity of supplies both day and night. This training should require actual removal of mines, barbed wire, construction of exits, building roads, placing markers, dispersal movement of stores to selected dumps, transportation control, etc. Such full scale exercises will complement the basic training, which provides the discipline and physical conditioning, of the personnel. Shore Party personnel should receive practical training in all types of boats and landing craft, and in working cargo on board ship and as winchmen. Only such training on full scale can bring the Shore Party personnel to a true realization of the magnitude of their tasks in actual operations on the enemy's shores, and prepare them for those tasks.

19. In landing on the enemy's shores it is essential that the equipment of the Shore Party be landed in early waves in order that they can begin preparation of the beaches, exits, dumps, etc., prior to the arrival of the motor vehicles. Mine detectors should be available to the Shore Party in adequate numbers, together with trained personnel, and, by mine removal, clear routes must be quickly prepared and marked. Trained traffic control personnel must erect proper sign-posts and control routing of traffic in both directions in safety and in such manner as to ensure proper dispersal to selected dumps.

20. During the planning phase the Shore Party, in conjunction with G-3 and G-4, should prepare complete plans giving location of various dumps, dispersal layout, anti-aircraft locations, road routes, marker and sign-post systems, vehicle crews, etc. The Shore Party should have full knowledge of the Ships' unloading plans and be provided with Priority Lists. Personnel of the Shore Party should be briefed in these plans and, during the Rehearsals of the Infantry Divisions, these plans should be rehearsed by the Shore Party personnel concerned. This will ensure centralized control of unloading and consolidation of beach dumps with due regard to the tactical and supply needs of the landing forces.

21. DUKWs should be used during the assault phase for the exclusive use of unloading ships and large landing craft; they should not be diverted during this employment, farther inland than the beach dumps. It is essential that an adequate number of vehicles be landed early for the use of the Shore Party in clearing beaches of supplies and in transporting stores to dumps. These vehicles should be provided with relief drivers in order that 24 hour operation can be assured, and these vehicles should not be diverted from their assigned employment except at the direction of the Shore Party Commander.

22. Markers, to indicate flanks of beaches and safe landing points and road exits, should be placed well back from the beach on the high dunes in order that they may be seen by DUKW drivers. Without such markers DUKWs have landed on the beach in the midst of enemy mine fields and without any idea of the clear paths and routes to the dumps. Beach marker lights were not set up promptly during darkness. It is believed essential that beach marking personnel go ashore in

the second assault wave and that these vital colored markings be erected quickly to guide the waves enroute to the beaches.

23. Anti-aircraft defenses of beaches require reexamination. The 37mm anti-tank gun is inadequate. The large number of craft and boats immobile on the beaches, and the uninterrupted movement of supplies and weapons, demands that beach protection be greatly augmented during the assault phase of a landing. Six large caliber guns per battalion should be provided. It is essential that all guns on a division beach be centrally controlled in order to exercise fire discipline. An adequate air raid warning system is a necessity on each beach. Barrage balloons every 200 yards along the beach frontage and over gasoline and munitions dumps will break up strafing attacks. The scale of AA defenses now assigned to beaches is entirely inadequate in any theater where enemy aircraft may oppose the landing.

Section XI — BEACH PARTY

Operations:

1. The Beach Battalions were the weakest link in the naval organization and were faced with one of the most arduous and difficult tasks. During the assault phase of the operation the efficiency of the Beach Parties was no better than that of the Shore Parties of which they were a part. As the engineers of the Shore Parties became primarily involved in normal combat missions, with little concern for the operation of the beaches, the Beach Parties failed similarly in the prompt and full execution of their responsibilities.

2. There was no concerted effort made to carry out prompt hydrographic surveys at first light on D day. Many craft, such as LCS(S)s, were observed lying idle off beaches at that time and could have been pressed into service. In a few isolated cases some soundings off-shore were obtained by some craft but there is no evidence that the results obtained were made known to the Beachmasters concerned, nor that any use was made of the soundings obtained. Since thorough surveys were not promptly carried out by all the Beach Parties, there was a dearth of channel markers. This resulted in LCTs and LSTs standing in to beaches to unload without any guidance as to favorable or unfavorable sites, resulting in the grounding of some craft some distance from shore and causing delays in beaching. In view of the dependence upon the successful employment of pontoon causeways, the off-shore investigations should have been planned in detail and executed promptly with the break of dawn. Since the Beach Party is not provided a boat from which to carry out this off-shore work, Beachmasters have had to confiscate boats to do this work. In future operations the plans of Naval Task Force Commanders should specifically provide for the allocation of survey boats at each beach. Scout Boats, stationed off beaches as markers to the assault waves, could undertake this work beginning at dawn. Fathometer equipment in these boats makes them particularly suitable; additional ratings required and special equipment as buoys, pennants, anchors, lights, etc., might be carried in this boat without interference in its beach marking or scout duties carried out during darkness. If this is not feasible, special boats should be assigned by Transport Commanders to execute the survey at daybreak on D day.

3. Traffic control boats were conspicuous by their absence, except in the JOSS area. As boats and craft carrying equipment and stores followed the assault waves to the beaches, these movements landed without instruction from control vessels or Beachmasters. This led to congestion on beaches which was further aggravated by the absence or unwillingness of Shore Party labor to unload the boats and craft. Due to the sea then running, scores of these loaded boats quickly became swamped or stranded, thus rendering those landing points unavailable to other craft to follow. Some boats were at beaches for as long as 20 hours waiting to be unloaded by Shore Parties. Had Beachmasters carried out the Standard Operating Procedure by establishing Traffic Control Boats off the beaches, and directed the landing of craft and boats, many delays due to beach congestion could have been avoided. In the CENT and DIME areas, it appears that few Traffic Control Boats were provided by the transports. These boats should be specified in the plans of Naval Task Force Commanders and Transport Division Commanders. The Traffic Control Boat Officer must establish radio (TBY), bullhorn, and visual communication with the Beachmaster off whose beach he is operating. He must require boat movements in accordance with the orders of the Beachmaster. More training of Traffic Control Boat crews, and a closer liaison with Beach Parties, is indicated. Coordination between the Shore Party and Beach Party would have ensured that boats were landed when and where labor was available to handle the stores.

4. When unloading beaches were shifted by the Shore Party, it appears that the decision

was not made known promptly to Beach Party personnel. Shore Party personnel became scattered over a long stretch of coast where they were left to shift for themselves; the lateral movement to and fro along the beaches caused the cessation of unloading until parties rejoined and reorganized at the new sites — in some cases this did not transpire until the following day. Discipline, leadership, and control were absent. LSTs standing in to beaches to land received numerous conflicting orders, and these ships were required to move several times before they were allowed to unload at any specific beach. As pontoon causeways were shifted, no information was transmitted to the Commander of the LST group, and no effort to coordinate activities was displayed. This condition was forestalled in the JOSS area where CTF 86 placed three Group Commanders (from landing craft organization) ashore as Head Beachmasters and thus reduced the beaches and boat control to order.

5. It appears that the CENT beaches in some areas were changed as frequently as eight times during the first two days of the assault. The reason for these changes was stated to be that the Shore Party commander was selecting sites where better exits from the beach existed. The preliminary study of these beaches during the planning stage of the operation had conclusively shown the absence of suitable exits and the necessity of construction of such exits and roads by the Shore Party. This command at that time pointed out this fact to the Army Command and had suggested an augmentation of the Road Construction troops assigned to the CENT area in order that this demand for exits might be met on D day.

6. Salvage operations of stranded boats were not undertaken promptly and, as more and more boats became stranded due to delays in unloading, the salvage soon grew beyond the capacity of the Beach Parties to handle with the limited facilities available. Some ships sent LCMs to the beach but most of these eventually stranded in attempting to retract other boats.

7. The boat salvage measures now in use are inadequate to cope with an operation involving hundreds of boats. Regardless of the salvage equipment placed ashore, the fact remains that most salvage activities must be carried out from seaward. The Beach Party, on each beach of one infantry battalion front, should be provided by the transports with one LCM carrying a bulldozer to be placed ashore. This LCM should carry experienced Boatswain's Mates, and be altered for salvage work at the shoreline. A large reinforced towing bit should be installed just aft of the boat coxswain's steering station, and a power anchor windlass should be located aft. Additional equipment should include two anchors, anchor lines, two handybillies, one stationary salvage pump with necessary hose, four 3½" towing lines complete, eight ¾" towing wire pendants, spare ramp cables, shackles, tools, etc. The crews of the salvage LCMs from the transports should train with the Beach Parties during pre-invasion exercises and rehearsals.

8. The plans of the Naval Task Force Commander should provide also for one LCI(L), especially fitted out with salvage equipment and trained personnel, to operate along the beaches of each Infantry Division after landing troops in first flight. This type of craft has the weight, power, and shallow draft needed to work close to the shore. These LCI(L)s should be provided with at least one 3" salvage pump with necessary hose, two portable pumps, a shallow water diving outfit, one complete welding outfit suitable for underwater welding, hawsers, towing pendants, line throwing guns, small pulling boats (as wherries) for running lines, etc. Fire fighting equipment should also be provided.

9. Each infantry division beach should be provided with a "Jaheemey" with a bulldozer as a prime mover. The "Jaheemey" should be completely rigged and assembled when loaded in an LCT for transportation to the beach. Beach Parties should be trained in its use. At the CENT beaches a "Jaheemey" was sent ashore disassembled without instructions for assembly or all the parts needed. Since the weight of the vehicle totals nine tons, and in the absence of lifting facilities on the beach, the assembly could not be accomplished by the Beach Party. If it is not practicable to provide a "Jaheemey" on shore, self-propelled tractor cranes should be provided to the Beach Party.

10. Beach Parties were provided with a complete set of plans and orders, yet they lacked a clear understanding of the unloading plans and apparently viewed the scene apathetically. The Beachmaster should be made fully conversant by the Army with the priority plans to ensure sufficient flexibility to permit some lateral mixing of supplies. Should any beach be closed down for any reason (as the DIME beaches due to enemy shelling on D plus one day), the Shore Party must be prepared to continue supply to the elements forward of that beach by operating through an adjacent one. This requires the closest cooperation between the Shore Party Commander and the Beach Party Commander. Unless such flexibility and understanding exists, efficient supply over the beaches cannot be brought about.

11. Delays of several hours were reported on some beaches in evacuating casualties due to shortage of unloaded boats. Closer coordination should exist between the Army and Navy medical groups. Casualties should not be brought to the exposed beaches until boats are available to evacuate them at once. Positive land-line communications between the Army Casualty Station and the Beachmaster would ensure this. There appears to be an excess of medical personnel in Beach Battalions as now constituted; this should be studied with a view of reducing the numbers to actual service requirements.

12. The Standard Operating Procedure provides that the Commander of the Navy Beach Battalion shall be provided with a jeep to enable him to be mobile. Even this single vehicle was not provided during this operation. A tactical plan (such as the CENT plan), which provides for landings to be made on a wide front, extending over a distance of 15 miles, obviously spreads shore and beach activities thin. As beach locations were frequently shifted to utilize selected exits to the hinterland, and other beaches were contracted or closed, a great lateral migration took place up and down the shore line. Entirely devoid of transportation, the Navy Beach Companies were required to pack their equipment on their backs and hike from scene to scene. Special equipment, such as radio apparatus weighing 1500 pounds, was immobilized until space could be arranged in some passing army truck. These lateral shuttles not only created widespread confusion ashore during the first two days, but also produced fatigue, thus contributing to the delay in efficiently organizing the CENT beaches and expediting the unloading of transports. The equipment and gear of a Navy Beach Battalion weighs 60 tons and measures 12,000 cubic feet. No shore transportation is now provided to this organization. Once placed ashore it is now without mobility. A Beachmaster cannot properly perform his duties unless he is constantly covering his beach and is on the exact spot where trouble exists. Immediate steps should be taken to render Beach Battalions mobile by providing them with an adequate number of jeeps, trucks, and trailers. A suitable number of vehicles would be 12 jeeps and 10 two-and-one-half ton trucks with one ton trailers.

13. Due to the unsatisfactory conditions existing on most beaches during the assault phase, personnel of the Beach Battalions engaged in various pursuits in which they should not be employed. Some of these were: unloading boats, road building, loading trucks, trans-beach traffic control, labor in dumps, stevedore labor aboard merchant ships, gun crews on beach machine guns, shore patrol, guards on Prisoners of War, and Port Guards. While such aid as rendered was commendable, it is felt that Naval Beach Party personnel should not be diverted from assigned tasks unless dictated by an emergency.

14. This operation imposed upon the American forces the possibility of beach maintenance for at least 30 days. Although the plans provided for coastal movement westward of our military forces, with a view of opening ports as soon as possible, it was realized that some beach maintenance would have to continue just so long as the 7th Army supply lines were connected to the Gela beaches. In order to meet these conditions it was planned to use Beach Battalions on these beaches as long as necessary and until Advanced Base personnel took over their normal duties. In the execution of this plan the Beach Battalions operated briefly as follows:

(a) 1st Beach Battalion.

Landed on the CENT beaches on 10 July (D day).

On 20 July shifted to port of Porto Empedocle.

On 25 July sent detachment of 1 officer and 20 men to assist in port of Palermo.

On 27 July sailed for Tunisian port, arriving on 30 July.

(b) 2nd Beach Battalion.

Landed on JOSS beaches on 10 July (D day) and began operating port of Licata the same day.

On 17 July sent detachment to port of Porto Empedocle until relieved by 1st Beach Battalion on 20 July.

On 23 July sent one company to port of Palermo.

On 29 July sent detachment to port of Termini until relieved by Advance Base party on 18 August.

On 2 August sent small detachments to north coast of Sicily to participate in leap-frog landings until 14 August.

On 20 August returned to North African port.

(c) 4th Beach Battalion.

Landed on DIME beaches on 10 July (D day).

Operated port and beaches of Gela until closed on 29 July.

15. From the above it will be noted that these units were required to work on beaches for periods of weeks, a task for which they were neither trained nor equipped to do. This resulted in a high percentage of ineffectives, due principally to fever, malaria, and dysentery. Any future operation requiring Beach Battalions to remain ashore for protracted periods should be preceded by suitable field training with the army with emphasis on care of the person and field sanitation. The equipment of the battalions should then include tentage, bedding rolls, field kitchens, water-making equipment, etc. Cooks should be included in the complement. Special precautions should be taken to provide mosquito bars, insect repellents, flea powder, etc.

16. Beach Battalions should be relieved at the earliest possible date by Advanced Base organizations, whose responsibility it is to provide the naval administration of captured ports. The diversion of Beach Battalions to such employment as tabulated above, after these units had been exposed for a long period on assault beaches, is warranted only in emergencies. Beach Battalions should normally withdraw from the theater with the combat-loaded transports or as soon thereafter as the military maintenance situation permits.

Training:

17. The Beach Battalion training in the past has not been what it should be. These units have been inactive during the period between operations and their training has suffered therefrom. These units require more navy life. They might well be quartered on board ship until the troops arrive aboard for amphibious training. Intensive shipboard training of all ratings along predetermined lines will produce better seamen and instill in the personnel of the Beach Battalion the necessary naval background. When troops come aboard the transports for training, the Beach Battalion might well then move ashore for their field training with the Shore Party. This should be laid out to include such basic training of the soldier as clean and orderly living in the field, how to get along with little and make that little do, how to take care of arms, equipment, and clothing and the necessity for doing so. Physical fitness, military courtesy and discipline should be emphasized in this training which should include overhead firing and other battle courses. Beach Battalions should be trained with the Shore Party Engineers in defensive tactics of the rifle squad and platoon, detection, removal, and destruction of mines and booby traps, removal of wire and beach obstacles, and in swimming and life saving. As the amphibious training of the infantry division advances to assaults on beaches, the training of the Beach Battalions should advance to their basic tasks on the beaches and the development of teamwork with the Shore Party. Such a program of training would keep the Beach Battalions fully occupied and would forge them into a skillfully trained unit ready for combat. These units are seamen first, and they should be garbed in a distinctive uniform in order that they may be distinguished on the beach. Helmets should be painted and marked so as to identify them as members of the Beach Party.

Command:

18. Many of the failings of the past have been due to the lack of rank, experience, and personality of Beachmasters. Such officers become submerged in numbers and seniority of the Army ashore. They lack the necessary rank and assurance to stand up against the constant succession of conflicting requests, orders, instructions and commands received on the spot from higher ranking Army officers, who are interested in getting one particular task done, but have no immediate interest in the overall beach task. Many high ranking Army officers, not in the Shore Party, call upon the Beachmaster to subordinate his tasks in the behalf of this seniors' peculiar interests, notwithstanding the capabilities and limitations of the Beach Party. Naval officers of suitable rank, experience, and quality can cope with such interferences and prevent diversion of effort. This need for improved quality and experience in the officers of the Beach Battalions is still existent. The best evidence of this fact is presented in the JOSS beaches where CTF 86 placed ashore on D day three Group Commanders of proven ability from his task force. These officers, Captains and Commanders, had the authority of their rank, experience, and personality, and were very effective in bringing the JOSS beaches from disorder to efficiency.

19. The Shore Party and Beach Party organizations constitute very important elements in all amphibious assaults. Failure of these parties fully to meet their assigned tasks, due to whatever cause, might well result in the failure of the assault forces to seize and hold a beachhead; the implications of such a dislodgement are so great that almost any action would be warranted to forestall its eventuality. That both the Army and Navy fully appreciate the difficulties that would attend such a reversal, there is no doubt. Nevertheless, there appears to be absent that complete understanding by both services of where and when the responsibilities of each begins and ends. This un-

fortunate circumstance is believed to be due to the imperfections and contradictions contained in the official publications which govern amphibious operations. The documents FM 31-5, FTP 155, and FTP 167 need revision at once. Much of these authorities is obsolete; the introduction of the air arm has brought with it further complications in command relationships. It would be helpful, however, if there existed a more thorough understanding that the Naval Commander has responsibility for the operation until the Landing Force is firmly established on shore, and that with him rests the authority commensurate with the responsibility.

Section XII — SMOKE

1. The employment of smoke for offensive and defensive purposes was incorporated in the naval plans but, in the execution of the plan, smoke was not employed to the fullest extent.

2. The most notable use of smoke during the operation was made in the JOSS area during the early hours of daylight on D day. The destroyer WOOLSEY placed a very effective smoke screen on the left flank of one of the beaches using 5"/38 white phosphorous projectiles, thus hiding the beach and craft from shore batteries firing from Licata. Scout Boats were also employed in laying a screen to envelop LSTs unloading into LCTs offshore.

3. Another occasion in the JOSS area took place about 0645 on D day when LCTs unloading tank units on Red Beach were placed under fire by enemy mortars and artillery. Distant targets were taken under fire by the cruiser BROOKLYN and destroyer BUCK, while the British LCG-4 moved close to shore to engage mortar positions within range of her armament. Meanwhile the destroyers WOOLSEY and NICHOLSON laid a screen to cover the craft on the beach. The fire support silenced the threatening enemy batteries and the smoke screen was most effective in screening the beached craft.

4. In the CENT area LCS(S)s employed smoke rocket projectors and smoke pots to cover one landing but the necessity therefore has not been reported.

5. Due to the fact that the assault area was in a gulf, and to the further fact that shipping had to be moved close to shore as soon as possible to expedite the unloading operations, the timely detection of enemy aircraft by our radar was rendered most difficult. The practice of the enemy to make many attacks from landward through valleys rendered radar detection at such times virtually impossible. Many attacks made from seaward were near screening vessels and, in some cases, over the transport areas. Early detection of enemy flights would have permitted the Task Force Commanders to give the alert and direct smoke-laying operations.

6. If smoke will lie at existing wind conditions, a large transport area should be covered within fifteen minutes. Upon the receipt of orders to lay smoke, all ships must send all available boats in the water to an up-wind position to lay floats and to make smoke-laying runs on such reverse courses as required to give a screen over own vessel. The ships themselves should throw floats or pots to windward from the ship so as to obtain a smoke cloud near the ship before the screen produced by the ships' boats drifts to the ships' anchorage. In daytime both black and white smoke should be employed.

7. At night the screen should be begun in sufficient time to be effective by moonrise. During moonlight the screen must be maintained. During night attacks, smoke-laying boats should keep to windward of own transport; if boats circumnavigate own transport the flames of the smoke pot will serve to pin-point the ship as a target to the enemy. At dawn the screen must be thickened to ensure adequate coverage until sufficient daylight exists to ensure enemy aircraft being seen by own gunners.

8. All APAs, XAPs, AKAs, and their boats are equipped with smoke pots and smoke floats. All fuel oil burning vessels have funnel smoke available. Many ships have smoke generators. Merchant ships should also be equipped with smoke pots prior to sailing for the assault area.

Section XIII — BARRAGE BALLOONS

1. The plans provided for the employment of balloons in accordance with the procedure adopted by the Royal Navy as a result of three years of warfare in the Mediterranean. The successful employment of balloons by merchant shipping in the Mediterranean, where convoys were under constant attack by enemy aircraft, was further emphasized by the skillful use of this apparatus by RAF detachments in numerous ports of Algeria, Tunisia, and Tripolitania, and on the beaches

where the North African campaign was being waged. Thus early in the planning stage of the Sicilian campaign it was recognized that lethal balloons were essential to the protection of the assault shipping and the assault beaches of the Western Task Forces.

2. Since this equipment comes under the cognizance of the Army, early requests were made of that service to obtain balloon units in this theater adequate to meet the assault requirements. Early requests upon the War Department from this theater produced replies to the effect that no barrage balloon units were available for the Sicilian operation; this information was disconcerting in view of scenes appearing in newspapers reaching this theater from the United States wherein photographs appeared of innumerable balloons over cities of the California coast and at military training centers on the Florida coast. Repeated requests were made for the equipment and steps were taken by the naval commands to install shipboard fittings in all assault transports then in the United States and North African waters. Merchant vessels scheduled to enter the assault area during the initial attack were also fitted out in the same manner.

3. In time, advice was received that three U. S. Army Barrage Balloon Batteries, the 102nd, 103rd, and 104th would be made available for the operation. With the passage of time and the non-arrival in this theater of designated Balloon Batteries, requests were made of the Royal Air Force to provide balloon detachments for use on the assault beaches. This resulted in the assignment of five RAF balloon detachments each consisting of one officer, 24 men, and 12 operational balloons.

4. After the arrival from the United States of the CENT combat-loaders in June, steps were taken to ensure that available balloon units were scheduled in the 7th Army Troop List in accordance with the needs of each Task Force. No control over the distribution or loading of these units was exercised by any naval command. On 23 June, the Commander, Western Task Force, was advised by the Army Commander that balloons were being assault loaded as follows:

(a) CENT (103 balloons, assault loaded)

- (1) 103 CA AA Balloon Battery: 45 operational balloons
- (2) 102nd Det. CA AA Balloon Battery: 46 operational balloons
- (3) 1 RAF Detachment: 12 operational balloons

(b) DIME (36 balloons, assault loaded)

- (1) 2 RAF Detachments: 24 operational balloons
- (2) 1 RAF Detachment: 12 operational balloons (in assault craft)

(c) JOSS (57 balloons, assault loaded)

- (1) 104th CA AA Balloon Battery: 45 operational balloons
- (2) 1 RAF Detachment: 12 operational balloons

5. On 7 July, while at sea, it was learned that the actual distribution and loading of balloons in the ships and craft was as follows:

(a) CENT (52 balloons, assault loaded)

- (1) 103rd CA AA Balloon Battery. The 45 balloons of this unit were found to be loaded in the holds of the LEONARD WOOD, SUSAN B. ANTHONY, and JAMES O'HARA. The equipment could not be made operational until unloaded from the ships and transferred to shore.
- (2) 102nd CA AA Balloon Battery. This unit had 40 operational balloons distributed among the combat-loaders and immediately operational.
- (3) 1 RAF Detachment: 12 balloons distributed among the combat-loaders and immediately operational.

(b) DIME (36 balloons, assault loaded)

- (1) 2 RAF Detachments: 24 balloons distributed among the combat-loaders and immediately operational.
- (2) 1 RAF Detachment: 12 balloons distributed among assault craft due in transport area on D day.

(c) JOSS (12 balloons, assault loaded)

- (1) 104th CA AA Balloon Battery. This unit had arrived in North Africa without its equipment which was enroute to the theater in a slow convoy. This battery was not loaded in the assault shipping.
- (2) 1 RAF Detachment: 12 operational balloons distributed in assault craft.

Summarizing, the balloons available on D day were:

<u>Force</u>	<u>Ship Defense</u>	<u>Beach Defense</u>	<u>Total</u>
CENT	40	12	52
DIME	24	*12	36
JOSS	0	*12	12

* Loaded in assault craft; to be shifted to beach defense when craft are unloaded at beaches.

6. In order the balloon strength of the JOSS force might be augmented to provide additional protection to the large number of craft unloading over the beaches, and in order to provide for the protection of the port of Licata which was to be in our hands on D day, it was then proposed to the Army that the 103rd Battery be unloaded from CENT transports into LCTs and be diverted to JOSS. This shift was so ordered. It was then discovered that the equipment of the 103rd Battery was stowed in the transports deep in the holds under trucks and other material. In endeavoring to comply with the order that balloon equipment be discharged with dispatch, some of the ships suffered delays in overall unloading because of shifting cargo to gain access to the buried balloon equipment. This unit was finally discharged into LCTs but these craft apparently unloaded over the Gela-Scoglitti beaches since they did not arrive in the JOSS area.

7. The balloons over the assault shipping were flown at 1000 feet, the greatest height attainable, and were very effective as a deterrent to strafing attacks. On the beaches, however, the barrage was so thin that it was virtually ineffective. The extreme length of the beaches being used by our forces required balloons in far greater number than were provided. The CENT beaches extended initially over a distance of twelve miles; DIME six miles; JOSS two detached areas, each three miles long, separated by a distance of about four and one-half miles. Obviously twelve balloons over beaches of such lengths offered a token effort only. During the first three days of the assault, enemy aircraft exploited the weakness of our beach defenses by making almost constant sneak raids along the beaches where landing craft, boats, pontoon causeways, stores and personnel were subjected to bombing and machine gun fire. These attacks continued until our own aircraft began operating from Sicilian airfields and our air supremacy made such raids unprofitable for the enemy.

8. All APAs, XAPs AKAs, LSTs and merchant vessels taking part in amphibious assaults should have installed, as a permanent installation, masthead (or similar) fittings, deck winches, and related appurtenances. Each vessel should have aboard a Balloon Unit (consisting of trained personnel of the U. S. Navy) having sufficient lethal balloons and gas to ensure the maintenance of an effective barrage over all assault shipping.

9. If this shipboard unit is not a part of the ships' organization, and the Navy continues to be dependent upon the Army for balloon protection, I recommend that the attention of the Chief of Staff, U. S. Army be invited to the necessity of providing for balloons in all theaters where U. S. forces are carrying out offensive amphibious operations.

10. Although dimensions of selected beaches will vary in different locales, and the organizational frontage employed in the assault will depend largely upon the military tactical plan being executed, it must be appreciated that early on D day there is invariably a shift in beach locations and an expansion in beach frontage as huge tonnages are being landed in the form of assault weapons, maintenance, and build up. Beaches where scores of landing ships, landing craft, and boats are immobile during unloading, and where pontoon causeways are rigged to ensure the landing of tanks, artillery, and vehicles, offer a most vulnerable target for enemy aircraft. With the inadequate scale of AA protection provided at assault beaches, the employment of balloon barrages becomes of even greater importance. Normally there should be a barrage balloon every 200 yards of beach frontage. Each pontoon causeway should have a balloon permanently over its seaward and shoreward end. Each LST should have over it its own balloon whether afloat or ashore.

11. It is not sufficient that Balloon Batteries be shown in a Troop List; these units actually must be embarked in ships and be fully operational to meet the needs of assault shipping and beaches. Balloon Batteries should not be eliminated from the Army Troop List on the pretext that such units are not "fighting troops". In point of fact the space required aboard ship for the equipment of this unit is comparatively insignificant when weighed against the utility of the unit. The usefulness of the unit more than compensates for the shipboard space occupied by it.

12. Although balloons have been viewed heretofore as passive defense weapons suitable for defense of ports and convoys moving in coastal and restricted waters, the Sicilian operation has forcefully demonstrated that this weapon is an essential and vital arm in amphibious assault operations, and one which thus far has not been fully exploited by the American forces.

Section XIV — OPENING OF PORTS

1. Amphibious operations requiring the landing and maintenance of military forces consisting of several divisions make it almost obligatory that a port be captured at the earliest date possible. If no port is available, or the captured port is incapable of handling the vast tonnages needed by the invading forces, it then becomes necessary to organize beach maintenance, a difficult and costly project placing a heavy drain on the resources of both the Army and the Navy.

2. Under the original Outline Plan of the Theater Commander, the ports assigned to the United States were Palermo, Trapani, Marsala and Sciacca. The first-named was classified as a "major" port and the others as "minor" ports. Advice was received from the United States that base equipment for those ports was being shipped to the theater. It was known in this theater that Sciacca did not possess a port worthy of the name, and in our planning the port of Mazzara del Vallo and/or Porto Empedocle was substituted therefor.

3. When the original plan was cancelled and the "Montgomery Plan" was adopted, the American assaults were shifted to the Gulf of Gela. The ports of Palermo, Trapani and Marsala under this plan were not to become available until late in the military campaign. In the support of our military forces we were committed, therefore, to beach maintenance for at least thirty days, a situation which could be alleviated only by capture of such small ports as existed in the wake of the advance of our military forces. For this reason it was suggested to the Army that early movements toward coastal ports would greatly aid the Navy in ensuring the continued maintenance of the military forces. It was decided therefore to initially establish a Beach Party component from a Port Party at Gela, and a minor Port Party at Licata. As the Army made subsequent movements to the westward, it was planned to open the small harbor of Porto Empedocle, followed by the ports of Mazzara del Vallo, Marsala, Trapani, and Palermo as these fell to our military forces. As the Army advanced and the lines of communication were shifted in order to prevent over-extension, it was planned to abandon in succession the ports of Gela, Licata, Porto Empedocle, and Mazzara del Vallo. With the opening of Palermo, on D plus 12, it was found the ports of Marsala and Trapani were neither suitable nor necessary to the support of the 7th Army, and United States naval Port Parties were withdrawn.

4. It is essential, in the early planning stages of the operation, that the officers destined to be Port Directors be present and participate in the development of the naval administrative plans. Such officers should assist in the development of plans for opening of ports, including sweeping of channels to ports, assignment of salvage and harbor craft, port defense, and related subjects. This will ensure that the equipment and personnel, sent from the United States to the theater for Port Parties, are suitable for the ports under consideration, and will greatly facilitate the assembly of material and the training of Port Party personnel in the theater prior to the assault.

5. In the interest of standardization, procurement of materials, etc., Port Parties are organized in the United States to provide for the occupation of bases and ports in theaters of war. Thus in the case of Sicily, equipment and stores were shipped to this theater for the ports enumerated in the second paragraph, the scale of the standardized unit being determined by an estimate of whether the port is "major" or "minor." It appears that in making this determination a thorough study of reliable port information was not the basis upon which the determination was made. As a result there has been shipped to this theater a vast amount of equipment which is not applicable to Sicilian ports and for which no useful purpose can be found. If sufficient time is available it would be conducive to efficiency and thrift if the planning for port requirements were performed as suggested above, and procurement and shipment of equipment to the theater were based upon the plans developed by planners on the scene of action.

6. When the military plans envisage the capture of ports on D day, or prior to the arrival of follow-up convoys, it is necessary that the Port Parties be embarked in the assault convoys, together with such equipment, appliances and stores as may be required by this organization to function efficiently until the arrival of later convoys bringing the remainder of the base equipment. The Army Troop Lists and Loading Plans must make provision for the loading of naval Port Parties in proper ship movements.

7. Where ports are thus scheduled for capture before follow-up convoys reach the assault area, and prompt movement of our ships into captured ports for unloading is intended, it is most important that Army Troop Lists provide for necessary stevedore and dockside labor troops to be available concurrently with the entrance of our shipping into the ports. It is not a naval responsibility to employ naval personnel in the task of unloading merchant vessels.

Section XV — PORT SECURITY and COMBAT INTELLIGENCE

1. Four naval officers possessing special language qualifications and trained in counter-intelligence attended a one month course in combat counter-intelligence given by the Army's Counter Intelligence Corps (C. I. C.) shortly before the invasion of Sicily. For the latter operation these officers were assigned to Commander Advanced Bases as Naval Port Security officers for duty with each Naval Port Organization. On D day they landed early, two at Gela and two at Licata. They immediately located fishermen familiar with the beach minefields, the condition of channels, and the booby-trapping of port installations. They also passed through the enemy lines and reached the Italian naval headquarters near Agrigento, where they captured documents, amended to 9 July, 1943, showing location of minefields off both Sicily and the Italian mainland. Two additional officers joined the original four after the assault.

2. After the assault and as ports were opened up, Licata, Porto Empedocle, and Palermo the Naval Port Security officers worked closely with the Army C. I. C. and did valuable work not only in port security proper, but also arranged for local pilots to return to work, supervised the reassembling and putting to sea of the local fishing fleet in order to ease the critical food situation, assisted in the interrogation of prisoners, and obtained local battle-order information.

3. I recommend that in future amphibious operations the specially qualified and trained Navy Combat Intelligence officers:

- (a) Be landed in early waves attached to Naval Beach Party for local reconnaissance intelligence;
- (b) Be provided with suitable transportation and portable radio in order that they may communicate intelligence directly to the Flagship.
- (c) Be assigned to Advance Base Groups for the consolidation period after ports are captured in order to organize naval port security and to locate and seize with utmost speed documents and equipment of naval interest.

The above assignments should be temporary so that the specialized services of these officers may be utilized in each succeeding operation for which they are qualified.

Section XVI — MAINTENANCE and BUILD UP

Plans:

1. The plans provided for assault forces, landing on D day, to be:

CENT:

45th Inf. Div.

DIME:

1st Inf. Div. (less 1 RCT)
1 Arm. Combat Command
82nd A. B. Div. (less 4 Bns.)
2 Bns. Rangers

JOSS:

3rd Inf. Div.
2nd Arm. Div. (less 1 Arm. CC)
1 Bn. Rangers

FLOATING RESERVE:

KOOL

1 RCT (1st Inf. Div.)
1 Arm. CC (2nd Arm. Div.)

GENERAL RESERVE (in North Africa):

9th Inf. Div.

2. The supply plan provided for the 45th Infantry Division, mounted in the United States, to land in the assault with 21 days maintenance and 10 units of fire. All other U. S. troops were mounted in North Africa and were to be provided with 21 days maintenance and 7 units of fire—these supplies to be carried in the assault, first and second follow-ups.

3. Due to the unavailability of ports in the region of the American assaults, plans were laid for beach maintenance for about 30 days. This administrative risk was lessened to a degree by a plan by which 1000 tons per day were to be landed through the ports of Syracuse beginning on D plus 14.

4. The rapid utilization of Sicilian airports was essential to the success of the military plan, and the logistic requirements of the air force were superimposed on those of the ground forces.

5. The tonnages involved in maintenance and build up were so vast that it required the following planned shipping movements:

(a) CENT Force:

(1) On D day, (in convoy NCF-1), the assault forces in 1 AGC, 7 APA, 6 XAP and 5 AKA, carrying 21 days maintenance plus 10 units of fire for troops mounted in the U. S. (approximately 10,900 tons) - less amounts carried in 1st Follow-up (convoy NCS-2).

(2) On D day, (in convoy TC-1) assault forces in 14 LST, 8 LCT, and 6 LCI(L), carrying 7 days maintenance plus 2 1/3 units of fire for CENT troops from North Africa (approximately 2400 tons).

(3) On D plus 4 (in Convoy NCS-2) 7 store ships loaded in U. S. ex-UGS-10, carrying remainder of 21 days maintenance plus 10 units of fire for 45th Inf. Div. plus vehicles and supplies.

(4) On D plus 4 (in convoy TC-2), 8 LST, 4 LCI(L), and 2 coasters. Craft carrying personnel and vehicles; coasters carrying 7 days maintenance plus 1 1/6 U. F. (approx. 3800 tons) for assault troops and 1st Follow-up for troops loaded in North Africa.

(5) On D plus 8 (in convoy TC-3), 6 LST, 3 LCI(L), and 2 coasters. Craft carrying personnel and vehicles; coasters 7 days maintenance plus 1 1/6 U. F. (approx. 3600 tons) for troops in assault, 1st and 2nd Follow-ups from North Africa.

(6) On D plus 14 (in convoy TC-4), 2 coasters, 7 days maintenance plus 3 1/3 U. F. (approx. 3600 tons) for troops in assault, 1st and 2nd Follow-ups from North Africa.

(b) DIME Force:

(1) On D day (in convoy NCF-1), the assault forces in 4 APA, 3 XAP, and 2 AKA, carrying 7 days maintenance plus 2 1/3 units of fire for assault troops, including 82 A. B. Div. (approx. 4700 tons).

(2) On D day (in convoy TD-1), assault forces in 16 LST and 19 LCI(L) carrying personnel and vehicles. H. Q. 7th Army 7 days maintenance plus 2 1/3 U. F.

(3) On D plus 4 (in convoy NCS-2) 10 store ships carrying 7 days maintenance (approx. 7600 tons) plus 1 1/6 units of fire for DIME assault troops and 1st Follow-up, including 82 A. B. Div.

(4) On D plus 4 (in convoy TD-2), 10 LST, 12 LCI(L), carrying personnel and vehicles.

(5) On D plus 8 (in convoy NCS-3), 7 store ships and 1 tanker, carrying 14 days maintenance (approx. 12,800 tons) plus 2 1/3 U. F. for DIME troops in assault, 1st and 2nd Follow-ups, including 82 A. B. Div. Tanker carrying approximately 660 tons 100 octane gasoline.

(6) On D plus 8 (in convoy TD-3), 11 LST and 23 LCI(L), carrying personnel and vehicles.

(7) On D plus 14 (in convoy NCS-4), 1 tanker carrying approximately 660 tons 100 octane gasoline.

(c) KOOL Force:

(1) On D day (in convoy NCF-1) assault forces in 2 AP.

(2) On D day (in convoy TK-1) assault forces in 6 LST, 7 LCT, and 27 LCI(L), carrying personnel and vehicles and 21 days maintenance and 4 2/3 U. F. - less amounts carried in 1st Follow-up (convoy NCS-1).

(3) On D plus 4 (in convoy NCS-1), 7 store ships carrying remainder 21 days maintenance (approx. 9700 tons) and 4 2/3 U. F. for reserve (KOOL) forces.

(4) On D plus 4 (in convoy NCF-2) 4 troop ships, carrying remainder of KOOL Forces.

(d) JOSS Force:

- (1) On D day (in convoy TJ-1) assault forces in 2 LSI(S), 40 LST, 85 LCT, and 54 LCI(L), carrying 7 days maintenance (approx. 6900 tons) plus 2 1/3 Units of Fire for JOSS Forces, personnel, and vehicles.
- (2) On D plus 4 (in convoy TJ-2), 2 LSI(S), 22 LST, 28 LCT, 34 LCI(L), and 4 coasters. LSI carrying troops; craft carrying personnel and vehicles; coasters carrying 7 days maintenance (approx. 7800 tons) plus 1 1/6 U. F. for JOSS assault and first Follow-up.
- (3) On D plus 8 (in convoy TJ-3), 15 LST, 24 LCI(L), and 5 coasters. Craft carrying personnel and vehicles. Coasters carrying 7 days maintenance (approx. 8600 tons) and 1 1/6 U. F. for troops in assault, 1st and 2nd Follow-up.
- (4) On D plus 14 (in convoy TJ-4) 4 coasters carrying 7 days maintenance (approx. 8600 tons) plus 2 1/3 U. F. for troops in assault, 1st and 2nd Follow-up.
- (5) On D plus 25, 4 coasters carrying maintenance supplies (approx. 6000 tons) for JOSS troops.
- (6) After the 2nd Follow-up craft convoys, all craft (U. S. and British) were placed in a pool for the build-up of Allied armies.

(e) RESERVE SUPPLIES:

In addition to movements scheduled above in support of forces being maintained and built up through the southern beaches, the following additional movements were set up:

- (1) To Syracuse on D plus 8, 1 AP carrying port depot parties, 2 store ships carrying 7 days maintenance (approx. 500 tons) for 2550 troops, and 2 LST carrying vehicles and personnel for depot parties.
- (2) To Syracuse (or southern beaches) on D plus 14, 4 cargo ships, (ex-UGS-11) carrying Force 21 days maintenance supplies (approx. 22,000 tons) and 4 U. F., less amounts carried in 7 other ships in UGS-11 convoy.
- (3) Held in North African ports to be called forward as required, 7 store ships (ex-UGS-11) carrying Force maintenance supplies.
- (4) Due to arrive at Oran on D plus 22, 11 store ships (ex-UGS-12) carrying Force 21 days maintenance supplies and 4 U. F. To be held in port, and called forward as required. Maintenance convoys thereafter every ten days arriving direct from the United States.

The number of ships in these convoys to be sent to ports for discharge to be based on acceptance due to rate of discharge and harbor clearance.

6. The Reserve supplies held for the 7th Army at the Eastern Base Section (Bizerta) available on call, included 15 days maintenance for 140,000 men, 3 1/2 units of fire, 25% combat vehicles, 10% General Purpose Vehicles, and 10% weapons. Other supplies for the 82nd Air Borne Division were located at Kairouan for movement by air.

Execution of Plan:

7. The assaults were carried out as planned. Licata was captured and opened to our craft on D day (10 July). On 16 July Porto Empedocle fell, and was opened at once to our craft. The total capacity of these two ports was insufficient to maintain the 7th Army and beach maintenance was continued. On 20 July the CENT beaches were closed, and on 24 July the beach personnel moved from the DIME beaches and Gela to occupy Palermo. The capture of that city on 22 July placed in our hands for the first time a port capable of accepting deep-draft vessels.

8. The tonnages unloaded over the assault beaches far exceeded any record hitherto attained in war. A brief summary follows:

	<u>10-12 July incl.</u>		
	<u>Person'l</u>	<u>D/W Tons</u>	<u>Vehicles</u>
CENT	22,654	7,801	2,179
DIME	23,161	3,351	1,485
JOSS	20,470	6,614	3,752
Total	66,285	17,766	7,416

Note: DIME beaches closed on 11 July due to enemy counter-attack, and reopened the following day.

9. After the departure of the combat-loaders, the CENT beaches handled as high as 1900 D/W tons per day, and the DIME beaches and Gela averaged about 2500 D/W tons per day. During the period 10-31 July, approximately 104,134 D/W tons were moved through beaches in southern Sicily. The greatest daily tonnage discharged on the southern shore was 6638 tons, on 18 July.

10. Palermo was opened to our shipping on 28 July (D plus 18) when 6 coasters from the D plus 14 convoy, carrying rations and gasoline loaded in North Africa, were diverted from the south coast of Sicily. Two of these coasters were routed onward to unload at Termini. Liberty ships of the UGS-11 convoy arrived off Palermo on 28 July and followed the six coasters to discharge points. Five other cargo ships of UGS-11 had been previously directed to the south coast for unloading. Thus essential supplies as food, gasoline and ammunition, which heretofore had to be trucked overland from the south coast, were brought directly to the troops. Palermo harbor was a wreck, when our forces entered the port, due to the heavy air bombardments which the harbor had so long endured. A total of 44 vessels, craft and barges were sunk in the channels and along the docks, reducing the capacity of the port to about 30 per cent of its value.

11. With the fall of Palermo the Army plan now provided for the supplies to the eastward-moving troops to flow from two directions: from the southward through the Gela, Licata, Porto Empedocle areas forward to Nicosia; from the westward through Palermo forward to Cefalu, the terminus of the operating railroad at that time. On 3 August Torremuzzo Beach in the vicinity of San Stefano was opened and, during the following ten days, was used as a discharge point immediately in the rear of our advancing troops. Two Italian schooners, requisitioned by the Navy at Palermo, were loaded at that port and sailed to Torremuzzo Beach. For LSTs were loaded at south coast ports with rations, gasoline and ammunition and sailed westward around the island to San Stefano.

12. On 1 August five personnel ships and seven cargo ships carrying elements of the 9th Infantry Division arrived at Palermo. The arrival of the 9th Division in Palermo slowed the discharge of cargo to the point where the total tonnage of rations unloaded fell below ration tonnage consumed. This was remedied on 10 August by the arrival of an LST from North Africa which carried a cargo of 200,000 rations. These were discharged at San Stefano. As the 3rd Infantry Division advanced eastward, a new supply point was opened on 16 August at Brolo Beach. At this point urgent ammunition was delivered close to the front lines by an LST loaded on the south coast and sailed around the island. Another LST carrying 195,000 rations from North Africa unloaded at this point. A coaster was partially unloaded at this point also. Barcellona Beach was used as an unloading point as the 7th Army progressed toward Messina and the land supply lines became greatly extended. From Brolo, rations and gasoline were shuttled to the 3rd Division at Barcellona Beach by LCTs on 16 August and 17 August. This movement of essential supplies at a time when they were critically needed, and when roads were impassable to motor transport, hastened the close of the campaign. In this manner the Army requirements of artillery and mortar ammunition, rations, motor fuel, and other essential combat supplies were met. These coastal movements by sea served two purposes: they augmented the stocks of ammunition and rations being built up in Palermo from deep-draft vessels, and materially eased the strain on land transport. Road and rail transportation was greatly hampered by demolitions of bridges and cornice roads, minefields, and similar enemy action, while the terrain and long tortuous roads placed operational strain on trucks. Thus at times water transportation by craft was the only means available of ensuring prompt supply to the troops at the front by unloading immediately in the rear of our forces. Other landing ships and craft were engaged in lifting troops and equipment in execution of leap-frog landings on the North Coast.

13. With the fall of Messina on 17 August, enemy resistance collapsed and Sicily was fully occupied, though the build-up and maintenance continued. By 29 August the port of Palermo had been brought to 60 percent of its capacity as a result of salvage operations. During the period 28 July - 31 August, this port received 48 ships in addition to numerous landing craft. These ships comprised 5 personnel ships, 32 Liberty cargo ships and 11 coasters. During this period 120,706 deadweight tons were discharged at this port. The largest daily tonnage was 5,718 tons.

14. Although the plans provided for the employment of craft in the shore-to-shore assaults, and two follow-up movements to carry in the "tails" of the assault forces, in the execution of the plan the landing ships and craft were used for continuous ferrying and lightering service, until the island was fully reduced. The following is a summary of the trips made from Tunisian ports during this period (6 - 18 August):

<u>TYPES</u>	<u>FROM TUNIS</u>	<u>FROM BIZERTA</u>
LSTs	162	252
LCI(L)s	72	108
LCTs	20	114
LSIs		4

The total trips in craft by types from Tunisian ports during these six weeks were:

LSTs	414
LCI(L)s	180
LCTs	134

Other ships movements from Tunisian ports were:

(Flagship) BISCAYNE	1 trip, carrying	86 troops
(Transport) CHATEAU THIERRY	1 trip, carrying	1530 troops
(Coaster) BRUCE JARL	1 trip, carrying	979 tons ammunition
Tug	1 trip, carrying	5 troops (scorpions)
LSIs	4 trips, carrying	757 troops

Thus the grand total of all voyages of all types of ships and craft from Tunisian ports was 736, all voyages but 8 being made by landing ships and craft.

15. The breakdown of the loadings at ports is as follows:

	<u>TUNIS</u>	<u>BIZERTA</u>	<u>TOTAL</u>
Officers	2,860	5,123	7,983
Enlisted Men	39,863	88,750	128,613
Civilians	0	18	18
Total personnel lift	42,723	93,891	136,614
Vehicles	8,778	20,622	29,400
Tanks	20	294	314
Guns	76	658	734
Ammunition, tons	3,181	3,738	6,919
Stores, tons	3,488	10,201	13,689
Airplanes, Cub	0	19	19
Mail, bags	0	5,512	5,512
Mules	0	304	304

The Bizerta loading is further broken down into assault and follow-up totals, as follows:

	<u>ASSAULT</u>	<u>FOLLOW-UP</u>	<u>TOTAL</u>
Officers	1,475	3,648	5,123
Enlisted men	25,564	63,186	88,750
Civilians	5	13	18
Total personnel	27,044	66,847	93,891
Vehicles	3,500	17,122	20,622
Tanks	230	64	294
Guns	232	426	658
Ammunition, tons } Stores, tons }	6,677	7,262	13,939
Airplanes, Cub	3	16	19
Mail, bags	0	5,512	5,512
Mules	64	240	304

The 658 guns are broken down, as follows:

37mm	226
40mm	114
57mm	58
75mm	8
90mm	95
105mm	103
155mm	54
Total	658

The total lift of 13,939 long tons of supplies is broken down, as follows:

Quartermaster	5,246
Engineers	923
Signal Corps	1,329
Ordnance	1,636
Ammunition	3,738
Ch. War. Service	599
Medical	35
Sp. Service	7
Red Cross	15
Air Corps	361
R. A. F.	9
Org. Equipment	41
<hr/>	
Total (long tons)	13,939

16. The figures given above indicate the tremendous logistic job carried out by the U. S. landing ships and craft, although the plan had not contemplated the employment of craft on this scale. The plans provided that with the completion of the passage of the follow-up division, the requirements of the Army would be met by the planned arrivals in the follow-up ship convoys. In fact it was far from the case. As late as 12 August (D plus 33), craft of all types were being called upon for continuous ferry service or lightering to bring in units vaguely referred to as the "tails." This in spite of the capture of all ports in Sicily except Messina.

17. It was recognized that in the absence of sufficient tugs and lighters it was inevitable that a proportion of LCMs and LCTs would have to be retained for lightering work. The scale of the continual long distance ferry service, however, was not anticipated. The follow-up and supply over the beaches is an exceedingly costly method and one which may be interrupted seriously by weather. It should be abandoned as soon as ports can be captured and exploited. Continued employment of landing craft in a maintenance shuttle service, a use for which they were not designed, produces

- (a) a serious strain on the craft, reducing them eventually to a non-operational status,
- (b) a serious strain on the craft maintenance and repair facilities, and
- (c) an increasing handicap to the planning and mounting of future amphibious operations.

None of these is considered justified by the results obtained.

18. LSTs are not suitable for carrying stores or "packaged goods"; when this is done there must be provisions made by the Army to furnish necessary manpower to expedite the unloading of the ships at their destinations. The crews of the LSTs are not adequate to cope with the task of unloading such cargo. This type of vessel is ideal for carrying vehicles and its use should be restricted to this lift. While the advent of this new type of craft has rendered the speed and ease of landing incomparably greater, it has, unfortunately, created a tendency toward laxity and opportunism in military planning. The LST is a lightly built ship with very unusual machinery, and is designed for a comparatively short life. The propelling machinery requires considerable maintenance without which breakdowns are of frequent occurrence. Therefore employment in follow-up schedules should utilize fully their quick loading and unloading capabilities to provide two or three trips with a rapid turn-round, followed by a definite period for "upkeep" in which maintenance work can be performed by ships' force and base repair facilities. If craft are to be available for future amphibious operations, their employment must be restricted to providing the rapid build-up required in the early stages of the campaign.

19. It is considered essential that in future amphibious operations the military logistic plans be so drawn as to permit follow-up commitments to be met by normally-loaded ship convoys, and that the use of landing craft be confined:

- (a) to the mounting and landing of minor outflanking operations
- (b) to the minimum scale for the coastwise maintenance of advanced forces
- (c) in exceptional circumstances, to meet emergency requirements.

Section XVII — REDUCTION OF THE ISLAND

1. In my Operation Plan No. 2-43, I had provided: "When military operations are undertaken for the reduction of the island, a Support Force, comprising light cruisers and destroyers, will be assigned to support the reduction operations by naval bombardment."

2. The reduction phase of the campaign began with the fall of Palermo and the consolidation of the forces of the 7th Army for an advance along the north coast of the island and a break through on the Axis line San Stefano-Nicosia. On 28 July, I created Task Force 88, under the command of Rear Admiral L. A. Davidson, U. S. Navy, (ComCruDiv 8), with the assigned task: "support the eastward advance of the 7th Army by gunfire support and by effecting advance landings of military units."

3. Forces available to C.T.F. 88 were:

CruDiv 8 - PHILADELPHIA (F)
SAVANNAH (30 July - 8 August)
BOISE (9-18 August)

DesRon 8 - WAINWRIGHT (F)
RHIND
ROWAN
TRIPPE

DesDiv 34 - GHERARDI (F)) Available until 6 August
BUTLER)
SHUBRICK (Bombed)

Desron 7 - PLUNKETT (F)
BENSON)
GLEAVES) Available when not required as escorts for
LUDLOW) convoys.
BRISTOL)
EDISON)
KNIGHT)

MTBron 15 - 14 PTs

Landing Craft - 2 LSTs)
10 LCI(L)s) Due to damage in action, replacements made
7 LCTs) were 3 LSTs and 5 LCTs.

Escort Craft - 4 PCs)
6 SCs) Due to damage in action, 2 PCs were replaced.
4 YMSs)

The landing craft and escorts were pooled with those assigned to defense of Palermo, in order to keep the combat quota filled.

4. Operations carried out against the enemy by CTF 88 in furtherance of his mission were:

- (a) bombardment of enemy positions in the immediate front of the 7th Army,
- (b) bombardment of enemy positions and communications in the rear by day and by night,
- (c) offensive sweeps nightly by destroyers to intercept attempts to supply or to evacuate,
- (d) nightly patrol by motor torpedo boats on reconnaissance or on offensive missions,
- (e) ferrying of troops, artillery and heavy equipment around demolished tunnels and bridges,
- (f) amphibious operations behind enemy lines,
- (g) expeditions against outlying islands.

5. The following brief summary outlines the direct support rendered to the 7th Army during the reduction phase of the campaign:

6. After the capture of Palermo on 22 July, the 45th Infantry Division moved eastward along the northern coast toward Messina, reaching Cefalu on 24 July. On 26 July this coastal movement reached the road junction north of San Mauro. On 27 July the advance continued to

Costel di Tusa, five miles west of San Stefano on Highway 113, and to San Mauro. On 29 July the 45th Division gained a position on the coast four miles east of the Tusa River, and moved one of its infantry units south to Mistretta and another to flank the enemy in the vicinity of San Stefano. The following day the advance of the 45th Division met stiff resistance from the 71st Panzer Grenadier Regiment of the German 29th Motorized Division. The destroyer ROWAN by gunfire covered the advance of our troops. One infantry unit of the 45th moved eastward from Pittineo, six miles southwest of San Stefano, to Reitano and prepared to attack San Stefano from the south.

7. On 31 July San Stefano fell to the 45th Division. The cruiser PHILADELPHIA bombarded enemy positions near San Stefano to aid the advance of the troops on the coastal road. Cruiser plane spot was used. A 6 inch shore battery returned the fire against the ship. The 3rd Infantry Division now relieved the 45th Division on the left flank of the 7th Army, and on 1 August advanced about four miles east of San Stefano. On 2 August the coastal forces consolidated their positions between San Stefano and Coronia, about six miles to the eastward, preparatory to resuming the eastward advance. The cruiser SAVANNAH and destroyer ROWAN placed fire on enemy positions as requested by the Army.

8. On the night of 2-3 August the PHILADELPHIA, ROWAN and KNIGHT laid down a heavy fire on the coastal highway and enemy strong point near San Agata. This fire was reported to be very effective. During daylight of the 3rd the PHILADELPHIA, SAVANNAH, GHERARDI and RHIND shelled the same area, enabling the 3rd Infantry Division to reach a position within two miles of the Furiano River, close westward of San Fratello. Cruiser planes provided spot.

9. On 4 August a considerable concentration of enemy artillery on the coastal road was observed, and increased resistance was met during the forenoon as the 15th Infantry Regiment made an unsuccessful attack across the river under cover of naval gunfire. This infantry unit then moved up the valley about two miles in search of a more favorable route across the river. Later that day, as the 1st Infantry Division attack on Troina gained momentum, the 7th RCT with attached artillery was shuttled by sea in landing craft to the area behind the 15th RCT, about one mile west of the Furiano River and two miles west of San Fratello, preparatory to an attack on San Fratello Ridge. Simultaneously, bombardment by the cruiser SAVANNAH was laid down on San Agata, Cape Orlando, highway 113, bridges, and defiles in that area. The shore battery at Cape Orlando returned the fire.

10. During the night of 4-5 August the destroyers GHERARDI and RHIND placed a bombardment on enemy positions near San Agata. On 5 August the 3rd Infantry Division continued its attack toward San Agata with the 30th RCT attacking San Fratello ridge from the southwest, while the cruiser SAVANNAH and destroyers ROWAN and TRIPPE took under fire enemy positions between San Agata and Cape Orlando. The shore batteries near the latter point returned the fire of the bombarding ships.

11. On 6 August the SAVANNAH and ROWAN carried out bombardment of positions ahead of our military forces, who made an unsuccessful attempt to gain a foothold across the Furiano River.

12. The next day strong enemy resistance was met by our ground forces near the coast, the enemy counter-attacking north of San Fratello. The cruisers SAVANNAH and PHILADELPHIA, using own aircraft for spot, laid a heavy bombardment in the area between San Agata and Cape Orlando. An enemy freight train and concentrations were taken under accurate gunfire.

13. During darkness on the morning of 8 August an amphibious landing was made in the rear of the enemy. A military force of one battalion of infantry, one tank platoon, and two batteries of field artillery landed near Terranova, at a point about six miles southwest of Cape Orlando. The naval forces consisted of two LSTs, one LCI(L), and seven LCTs with escorts. Support was given by the cruisers PHILADELPHIA and SAVANNAH, and the destroyers WAINWRIGHT, RHIND, ROWAN and TRIPPE. Gunfire support was rendered on call from Shore Fire Control Parties. This landing took the enemy by surprise and broke his resistance in the San Fratello area. Units of the 3rd Division quickly took the heights of Mount Fratello and occupied the towns of San Fratello and San Agata. During the day the PHILADELPHIA shelled enemy positions in the vicinity of Cape Orlando, using Army planes for spot. This gunfire was returned by enemy batteries firing at a range of 16,000 yards.

14. On 9 August units of the 3rd Division advanced slowly over heavily mined areas as the enemy withdrew east of the Zappula River. The following day our forces crossed this river after beating off an enemy counter-attack; the enemy appeared to be organizing a defense on the line Cape Orlando-Naso.

15. During darkness early on 11 August, another amphibious landing was made in the rear of the enemy's lines. A military force of one infantry battalion, reinforced with armored artillery and tanks, landed two miles east of Cape Orlando and captured a position astride the highway and railroad two miles west of Brolo. The naval forces consisted of one LST, two LCI(L)s, and six LCTs with escorts. Support was given by the cruisers PHILADELPHIA and BOISE, and the destroyers ROWAN, RHIND and TRIPPE. Resistance to the landing was met from artillery emplacements in the hills and from 20 mm guns located in pill boxes on the beach. Fire from these positions was sporadic and inaccurate, and these positions were completely neutralized by naval gunfire. During daylight the PHILADELPHIA broke up a German counter-attack which threatened the forces just landed. This gunfire was extended to the road east of Brolo and west of Cape Orlando. This cruiser, on 11 August, fired 1062 rounds of 6"/47 H. C. ammunition. The enemy returned the fire, but all shots fell short of the cruiser.

16. On 12 August the 3rd Infantry Division moved into Cape Orlando and joined the forces which had landed west of Brolo. Under the cover of gunfire from the cruiser BOISE, the 30th RCT of the 7th Infantry moved rapidly along the coast road and took Brolo; other elements of this regiment entered Ficarra, five miles south of Brolo. During the night of 12-13 August the destroyers BENSON and PLUNKETT bombarded the coastal road between Brolo and Patti where enemy forces were withdrawing to the eastward.

17. On 13 August the 3rd Division continued its advance eastward to within two miles of Patti. The advance past Cape Calava, four miles northwest of Patti, was impeded by a large crater blown in the road at the eastern end of the Calava tunnel where the road had been carved from solid rock formation. This block was by-passed by embarking the troops with their artillery and vehicles in LCTs and ferrying them around the cape to a point to the eastward of the road-block.

18. On 14 August the cruiser BOISE and destroyers ROWAN and BENSON placed a heavy bombardment on enemy artillery, motor transport, and grounded aircraft concentrated near Milazzo; our troops advanced rapidly along the coast road, captured Oliveri and Falcone, and reached a position three miles east of Barcellona.

19. During the night of 14-15 August the destroyers PLUNKETT and GLEAVES laid a bombardment behind the enemy lines on the forces withdrawing on the coastal road. On 15 August the American troops moved into this area capturing Spadafora, twelve miles east of Barcellona.

20. During darkness early on the morning of 16 August, another amphibious landing was made from landing craft. The 157 RCT of the 45th Infantry Division was to have been landed eastward of Milazzo but, due to the rapid advance of the 3rd Division to Spadafora, the 7th Army decided to land this RCT behind our own lines. The landing was diverted, therefore, to the beaches northwest of Barcellona. The naval forces consisted of three LSTs, eight LCI(L)s, and thirteen LCTs with escorts. Cover was provided by PHILADELPHIA, BOISE, BRISTOL and KNIGHT. The screen was composed of the destroyers WAINWRIGHT, RHIND, ROWAN and TRIPPE. On the 16th our forces advanced from Spadafore and by dark had reached Divieto. During the night, patrols entered Messina, which was fully occupied the next morning. With the fall of Messina, the island of Sicily was fully reduced.

21. On the night of 17-18 August U. S. Naval forces carried out bombardments of the Italian mainland. The PHILADELPHIA, PLUNKETT and BENSON placed well directed fires into Gioia Taura, while the BOISE, NIBLACK and GLEAVES bombarded Palmi. On the night of 19-20 August, the destroyers WAINWRIGHT and TRIPPE bombarded Gioia Taura, starting a large fire on shore.

Expeditions against Islands:

22. On 4 August the destroyers PLUNKETT and GLEAVES with LCI(L) 213 sailed to the island of Ustica, demanded and received the surrender of the military garrison.

23. On 17 August the destroyer TRIPPE with six PT boats demanded and received the surrender of the Lipari Islands.

Offensive Sweeps and Patrols

24. MTBron 15 had been operating out of Palermo for some time when Task Force 88 was formed. As destroyers then became available for use in maintaining a continuous security patrol off Palermo, the PTs extended their offensive sweeps against enemy shipping along the north coast of Sicily to the Straits of Messina and into the Gulf of Gioia and the Gulf of S. Eufemia.

25. On the night of 29-30 July two PTs engaged with guns and torpedoes two enemy "F" lighters and four escorts south of the Lipari Islands. Our craft sank one enemy escort, but enemy gunfire damaged our craft and nine men of the crews were wounded.

26. The destroyers GHERARDI and RHIND made an offensive sweep south of the Lipari Islands on the night of 3-4 August. A German "F" lighter, escorted by two motor torpedo boats, was encountered. The GHERARDI destroyed the "F" lighter by gunfire, while the RHIND sank one escort and damaged the other which escaped. On the nights of 4-5 August and 5-6 August, these two destroyers conducted offensive sweeps off Milazzo, but no enemy shipping was found.

27. Five enemy "E" boats attempted an attack on the harbor of Palermo on the night of 5-6 August. The destroyer GLEAVES in the outer screen drove them off by gunfire. Floating torpedoes were subsequently found in the area. Shipping off Palermo was subjected to an enemy bombing attack about 0430 on 6 August, and the "E" boat attack may have been coordinated with the aircraft raid.

28. On the morning of 6 August, during darkness, SC 550, with a water barge, was lying off Ustica island when attacked by two destroyers or small cruisers which withdrew at high speed.

29. On 7 August an enemy submarine was reported 60 miles from Palermo; later sightings placed the enemy nearer the port and again off Cape Cefalu. Destroyer searches were negative. No offensive action by this submarine was reported.

30. Two enemy cruisers of the GARIBALDI class and two destroyers were reported headed for Palermo on the night of 7 August. CTF 88 in PHILADELPHIA was then conducting the first "leap-frog" amphibious operation off Cape Orlando. A task group, composed of PHILADELPHIA, SAVANNAH, ROWAN and RHIND proceeded at once on a scouting line to intercept the enemy forces between Palermo and Ustica Island. No contact was made. At daylight a reconnaissance by Allied aircraft showed the enemy forces then to be 100 miles to the northward proceeding at high speed on a northerly course. The task group returned to Cape Orlando to support the amphibious forces.

31. On the night of 11-12 August the destroyers WAINWRIGHT, TRIPPE and ROWAN made a sweep within two or three miles of the Italian coast from Point Iscolelli to Point Licosa; no enemy shipping was observed.

32. Other offensive sweeps by destroyers were made on the nights of 12-13, 13-14, 14-15 and 15-16 August. No enemy forces were encountered.

33. On the night of 15-16 August, three PTs, while patrolling in the vicinity of the Lipari Islands as a flanking screen of the last amphibious landing, engaged two enemy "E" boats by gunfire in a running battle. The enemy escaped due to superior speed but both sustained damage. Five men of our craft were wounded by shrapnel from a time-fused projectile believed to be larger than the 40mm normally carried in this type of enemy craft.

34. At dawn on 16 August our PT patrol captured Italians fleeing Lipari Island; information acquired from these prisoners led to the movement against the island group on the 17th.

35. On the night of 17-18 August two groups of cruisers and destroyers made offensive sweeps into the Gulf of Gioia, and on the night of 19-20 this sweep was carried out by the destroyers WAINWRIGHT and TRIPPE. No enemy shipping was observed but all vessels executed a bombardment of pre-arranged shore targets.

36. The offensive movements briefly outlined above constituted a threat to the enemy which greatly hampered his efforts to evacuate troops by sea along the North Coast during the reduction phase of the campaign.

Amphibious Operations:

37. Flanking movements by sea, or "leap-frog" landings, were executed on three occasions. The first two of these operations placed our troops behind the enemy lines under the protection of

naval guns, thus enabling our troops to capture strong points and crack the enemy defenses, thereby speeding the advance of our ground forces toward Messina. The third landing, on 16 August, was not executed behind the enemy lines due to the rapid advance of our ground forces on the preceding evening. The troops were landed, at the request of the 7th Army, behind our own lines but served the purpose of moving our forces forward to a position where pressure on the enemy could be maintained.

First Operation

38. Landing craft and escorts were assembled at the loading point at San Stefano preparatory to an assault on 7 August. Bombing attacks on 6 and 7 August on assembled craft damaged one LST and one PC, requiring the operation to be postponed one day. Two of the four FW190's making this attack were shot down. The embarked military units consisted of the 2nd Battalion, 30th Infantry, a tank platoon of the 753rd Tank Battalion, and two batteries of the 58th Armored Field Artillery Battalion. The convoy group consisted of two LSTs, one LCI(L), and seven LCTs under the escort of one PC. The screening group comprised three destroyers, two PCs, two SCs and two YMSs. Flank screening to the northeastward was provided by six Motor Torpedo Boats. Gunfire support was provided by the cruisers PHILADELPHIA and SAVANNAH, and destroyers ROWAN and TRIPPE. At 0150 on 8 August the two LSTs reached the lowering position three miles from the selected beach which is located near Terranova, about six miles southwest of Cape Orlando. LCVPs were lowered and the assault wave landed unopposed at 0315, with subsequent waves following at fifteen minute intervals. All landing craft landed and troops and vehicles unloaded by 0408. By 0425 all craft had retracted and made rendezvous at the initial lowering position. The landing was a complete surprise to the enemy. No losses were sustained. Over 1200 prisoners and much equipment was captured. The landing resulted in the collapse of enemy resistance in the San Fratello area.

Second Operation

39. After the first landing was completed, all craft were assembled at Caronia preparatory to executing a landing scheduled for the morning of 10 August. This operation was delayed until 11 August in order to permit the 3rd Infantry Division to advance further in the direction of Cape Orlando. On the evening of 9 August three FW190's bombed the assembled craft, sinking one LST. Two enemy aircraft were shot down. On the morning of the 10th five FW190's made a low bombing attack on the craft; two enemy planes were shot down.

40. The troops embarked for this landing consisted of the 2nd Battalion, 30th Infantry, reinforced with armored artillery and tanks. The convoy group comprised one LST, two LCI(L)s, and six LCTs under the escort of three PCs. Vessels of Destroyer Squadron Seven acted as screen. Gunfire support group was PHILADELPHIA, BOISE, ROWAN, RHIND and TRIPPE. The convoy sailed from Caronia at 1845 on 10 August and reached the lowering position, three miles off the selected beach, at 0025/11. The landing point was two miles east of Cape Orlando. The assault waves reached the beach at 0246 with other craft following at prescribed intervals. Resistance was encountered in the form of 20mm fire from pill boxes on the beach and artillery farther inland. This opposition was neutralized by naval gunfire and all craft reached the beach on schedule and retracted without damage. At 0419 all craft had assembled at the initial lowering position for retirement. This landing enabled our ground forces to envelop the enemy defense line Cape Orlando - Naso; the German counter-attack which developed on the 11th of August was routed by a prolonged bombardment accurately placed by the cruiser PHILADELPHIA, thus destroying the last determined stand made by the enemy along the north coast.

Third Landing:

41. This movement was planned at a time when our ground forces were making rapid movements along the coast, where the enemy was concerned primarily in a hurried evacuation. The plan provided for the 157th RCT of the 45th Infantry Division to land near the town of Rodi, about eight miles southwest of Milazzo. The loading plans required three LSTs and eight LCI(L)s to load troops and DUKWs at Termini, and thirteen LCTs to load the remainder of the troops and vehicles at San Stefano. The escorts were two PCs; the screen was four destroyers, the WAINWRIGHT, RHIND, ROWAN and TRIPPE, and two PCs, two SCs and two YMSs. A flanking screen of six Motor Torpedo Boats was assigned. The craft left Termini at 1340 on 15 August to effect rendezvous off Cape Orlando with the other units. Information was then received that our ground forces had occupied Rodi, and the landing was directed to land at a point east of Milazzo. At 2010 orders were again changed due to the rapid advance of our troops, and the

vessels were directed to land at the original point near Rodi behind our own lines. The lowering position three miles off the beach was reached at 2308. The first wave reached the beach at 0050/16. Although all craft were heavily overloaded, all were completely unloaded by 0212/16.

42. The high degree of efficiency achieved in these landings, which were undertaken without bomber support or shore artillery support, and which were executed on schedule and without confusion, was due largely to the employment of experienced naval commanders and crews and well-trained troops. This fact made it possible to launch these operations with little preparation and on short notice. Because of the ever-present enemy bombers, these operations were so planned that the landing craft would be in the landing area a maximum of 3½ hours, and be withdrawn prior to daylight. This time element necessitated loading the heavy mechanized equipment in LCTs, and carrying in LSTs the assault troops and DUKWs loaded with supplies. With experienced forces and some knowledge of the beach approaches, the existence of exits and roads for vehicles and suitable terrain for a beachhead, the task groups were dependent upon the offensive spirit and the will to win brought into the operations.

Ferrying of Troops

43. The terrain in which the campaign was waged has been best described by the Army officers who participated therein. The following account, compiled by AFHQ, is an excellent word picture:

"The campaign of the American forces, after the initial establishment and extension of the beachheads, was on the whole a pursuit action throughout. The enemy for the most part fought a stubborn rearguard and delaying action, utilizing the terrain, prepared defenses, mines, and demolitions to the fullest possible extent. - - - - The country fought over was of the roughest kind. Its chief features were high, rocky mountains and hills of volcanic origin studded and broken with sharp and rugged outcroppings of rock formations, crossed by tortuous tracks and trails, and cut by deep and narrow valleys and dry watercourses. Such terrain as this, encountered throughout most of the island, presented difficulties of movement and transport not generally equalled in the Tunisian Campaign. In almost every sector the road nets were limited and restricted, and in the northern coastal area where German resistance was most stubborn it was practically confined to one road, flanked on one side by steep mountains cut by traverse valleys, and on the other by the sea. Over this single road the advance in this sector was forced to move in pursuit of the withdrawing Army who demolished almost every bridge from Palermo to Messina. This same road had also to serve for communications and supply as the advance was ultimately pushed to the Straits. This type of terrain, coupled with the lack of parallel, auxiliary, or alternate roads necessitated - - - - a special operation on a grand scale, involving amphibious operations and mountain warfare almost exclusively.

"The influence of the terrain and road net in conjunction with the extensive use of mines and demolitions by the enemy, on troop movement and maneuver can hardly be exaggerated."

44. To meet the extraordinary conditions confronting our ground forces on the north coast, a number of amphibious landings were executed. In addition to these tactical movements, seven LCTs were employed in a ferrying service. These craft lifted Army personnel, artillery and heavy mobile equipment from point to point along the coast, and were frequently subjected to bombing and strafing by enemy aircraft. The enemy depended principally upon demolished bridges, blown tunnels, road blocks and mined roads left in his wake to impede the progress of our advancing forces. These elaborate and thorough demolitions were by-passed, and the enemy's actions in a large measure nullified, by our exploitation of sea communications — an avenue not enjoyed by the enemy due to our Navy exercising control of the sea areas. Thus these LCTs enabled the artillery and armor to keep pace with the rapidly advancing infantry and maintain constant pressure on the retreating enemy. Had these sea movements not been made, the progress of our heavy weapons would have been seriously delayed and the momentum of the U. S. offensive considerably retarded, thus prolonging the campaign.

45. The employment of U. S. landing craft, in providing the logistic requirements of our military forces fighting on the north coast, is outlined herein under "Maintenance and Build Up."

Bombardment of Enemy Positions:

46. Naval gunfire was employed as close and deep supporting fire, interdiction, and harassing fire on call targets in direct support of the Army, and interdiction and harassing fire on road-

way intersections, railways, and strong points well in advance of our Army and behind the enemy lines.

47. The effect of this gunfire was exceedingly satisfactory. Several mobile shore batteries of six and eight inch caliber engaged the ships, but no damage from shore artillery was sustained. The Army credited the SAVANNAH with knocking out one of the eight inch batteries.

48. The original plan for these gunfire missions provided for the employment of cruiser aircraft (SOC-3) as spotters under the protection of fighters from the 12th Air Support Command. This arrangement did not prove satisfactory. Cruiser planes were forced to spot from a seaward position due to heavy and accurate enemy AA fire behind the lines. The firing ships, during the first few days, were unable to communicate with the fighters; after proper radio equipment was installed in the fighters, the ships were not informed when the fighters left the area. This report was dispensed with by the air command in order to prevent radio interception by the enemy of the knowledge that the fire support ships were unprotected. This resulted at times in the vulnerable cruiser observation planes operating over enemy territory without any form of protection; a risk warranted only by the excellent effects of the naval gunfire.

49. The Shore Fire Control Parties were often hampered in spotting fall of shot by the rugged terrain along the coast. The mountainous spurs separated by deep ravines made it difficult for these land-based spotters to reach suitable sites for observation of the ships' fire.

50. During the last part of the bombardment phase, good spotting results were obtained by using the Army Piper Cub planes which operated from roadways or fields behind our own lines, where the observers were in close contact with the Army commander and had reliable information regarding the position of the front lines, disposition of forces, etc. These small planes were unable to establish radio communication direct with the firing ship, and spots had to be relayed via the Shore Fire Control Party. This procedure slowed the rate of fire. Another difficulty which had to be overcome was the different method used by the Army and Navy in spotting. The Army practice is to give the error of the M. P. I., while the Navy system is to give the correction necessary to put the M. P. I. on the target.

51. During night bombardments and during hazy weather in the day, radar was used with uniformly excellent results in determining the ships' position and range to target.

Air Cover:

52. The operations along the north coast of Sicily were conducted within 200 miles of fifteen enemy airfields, four of which were within 60 miles until the fall of Catania on 5 August. As a result, the ships and craft operation off the north coast were, until the middle of August, under repeated bombing and strafing attack by enemy aircraft. Due to the inadequate air coverage provided the naval operations, an effort was made to limit the time the cruisers would be in the gunfire support areas. To station those vessels in daylight positions offshore, awaiting call by the Army, invited enemy air action. The continuity of the air coverage provided was inadequate to protect naval movements, and frequent enemy attacks were pressed home without interception by our fighters. The thin fighter cover provided was apparently due to an inadequate number of aircraft being available to meet all air requirements. Communications with fighter air coverage when present were not good; this is believed to be due largely to lack of indoctrination in procedure and lack of experience on the part of both ship and air force personnel. Communications between naval commanders and the air force control stations were poor. This was aggravated by the fact that the Air Support Command was not located at Corps Headquarters, whence requests for gunfire missions originated. This resulted in loss of time in arranging for fighter cover and, on some occasions, resulted in none being furnished. If the 12th Air Support Command had taken a more active part in the initial planning of the campaign and had been less desirous of showing its independence vis-a-vis the Army, difficulties might have been obviated.

Summary:

53. The operations of Task Force 88 were, it is believed, unique in the following particulars:
- (a) A combatant naval force operated for a period of 22 days from an unprotected anchorage within easy bombing distance of enemy shore-based aircraft.
 - (b) Denied to the enemy command of a sea area within which the task force carried out its operations.
 - (c) Rendered continued support to our troops during this period by bombardment immediately in front of our ground forces and against the rear of the enemy; these areas being inaccessible to our Army artillery because of the distinctive mountain aretes.

(d) Conducted improvised amphibious operations around the enemy's unprotected seaward flank.

(e) Ensured the safe and prompt delivery by sea of food, gasoline and ammunition to our troops when supply lines over land were heavily strained.

(f) Overcome the obstacles of demolished bridges, blown tunnels, and mined roads by moving heavy artillery and armor by sea to keep pace with the advancing infantry, and thereby demonstrated the power of coordination and cooperation between ground, air and sea forces, and contributed to early capture of Messina by the 7th Army.

54. During the operations of this Task Force, over 20 enemy planes were shot down, one "F" lighter and two escort vessels were sunk and several "E" boats and escort vessels damaged. The Island of Ustica and the Lipari Islands (a group of seven islands) were taken, with 140 prisoners of war, their arms and several valuable secret codes and ciphers.

Section XVIII — DIVERSIONS AND DEMONSTRATIONS

1. A Demonstration Group was organized as Task Group 80.4 with the mission of conducting deceptive operations in assigned areas. The craft allocated the group were 10 ARBs and 1 PT. These craft mounted special deceptive equipment and employed specially-trained personnel to assist in the execution of diversionary tactics. CTG 80.4 was also given duties as an Air-sea Rescue Service.

2. The plan called for the group to conduct a diversionary operation at 0215 on D Day in the neighborhood East of Point Granitola. The moderate to heavy seas and the wind (20 to 30 knots) encountered forced the cancellation of the operation. The craft were unable properly to execute their mission under such severe conditions of wind and sea.

3. CinCMed's plan for a large scale diversion (code name Operation FRACTURE) in the Marsala-Mazzara area, involving the use of battleships and cruisers as well as MTBron 15 and Task Group 80.4, contemplated execution on pre-dawn of D plus 3. Provisions were made for this date to be advanced or retarded according to military developments. As it was, the operation was advanced to the night of D plus 1. Due to a delay in communication, TG 80.4 did not receive timely information regarding the change in plan. An independent demonstration was, however, conducted by this group in Porto Palo area. Searchlights, heavy MG and AA fire resulted. Operation FRACTURE was considered successful in its assigned mission.

4. On the night of D plus 2/3 TG 80.4, together with units of MTBron 15, carried out two small scale diversions in separate sectors off the Southwestern Sicilian coast. The defenses East of Cape Granitola displayed limited interest by MG fire and searchlights, but the other group reported a reaction of defenses off Mazzaro del Vallo. Radar-controlled shore batteries took this group under fire with light and heavy guns before demonstration was begun, and the group was forced to retire. One near-miss, presumed to be from a 6" battery, bent both propellor shafts of one craft. Other small scale operations mounted from Palermo provided limited results. Shore defenses sent up rockets on occasion, but none of the demonstrations was mounted on a big scale and little more could be expected.

5. Detailed enemy reports as to the effect of these various demonstrations were not available. However, enemy press reports after FRACTURE stated that they had repulsed a landing attempt on the Southwest coast. The plan for these demonstrations was not able to provide for the allocation of the right type of craft to exploit this form of diversion. Furthermore, heavier gun-fire support — together with cooperation of Air Force units — would have aided the effect desired. As all branches of the service were strained to support the main attack, these could not be provided. Only in FRACTURE was it possible to assign large units for a diversion in which their group was to be an important implementation. The short time allowed to organize this special group, and the limited means available to plan for its employment on an important scale, precluded the possibility of its having a more concrete effect on operations.

Recommendations:

6. Diversionary operations should be carefully planned, well in advance, and as much attention should be given it as the strategic and tactical situation will allow. A diversionary group will have considerably greater effect if every effort is made to make the operation appear real. Otherwise no important results can be expected. In addition to whatever force is assigned the task of executing the diversionary mission, the proper employment of special deceptive equipment can be

of considerable value. Coordination with the air forces, together with their uses of additional special equipment, is required. The Diversionary Task Group may also be used as a raiding group, to interfere with enemy light coastal traffic, to execute small-scale amphibious raids (if Special Service military personnel are available), or to augment landings on a larger scale by diverting the attention of enemy defenses. Whenever possible, the planning for diversions should be tied in with the basic "cover plan" for the operation. Greater efficiency in the tactical execution of diversions can be achieved if the Task Group or Force is organized and operated as an independent unit directly under the senior Task Force Commander in the area. In this way, a closer planning liaison can be maintained with the strategic concept of the highest echelon. Units from the Group could be detached and assigned to a Task Force Commander as and when required.

Section XIX — OPERATIONS OF P. T. BOATS

1. MTBron 15 was designated (with U.S.S. ORDRONAU) as Task Group 80.3 (Screening Group) and was assigned the mission of screening JOSS Attack Force against hostile surface forces approaching from bases in West Sicily. They were also to frustrate enemy E-boat raids. After preliminary assault the ORDRONAU was to return to CONTROL Force. MTBron 15 was to return to Pantellaria and prepare for further operations. They were further assigned missions in Sicilian areas until the fall of that island.

2. The Group proceeded to the area of Port Empedocle. The PTs formed a patrol line toward shore with the ORDRONAU at the seaward end. An offensive sweep Westward was conducted until the Group approached the harbor of Port Empedocle. An effort was made to drive out by gunfire any enemy light craft (E-boats and MAS boats) which might be based there. Firing by the ORDRONAU commenced at 0245, H-hour. The four 5"/38 calibre guns were fired from the director, Master Key, salvo fire every six seconds. Range and deflection was spotted to cover an area approximately 1500 yards beyond, 500 yards short, and 1000 yards on either side of the target. At 0247, "Cease Firing" was ordered. 26 salvos for a total of 80 rounds of AA common projectiles were fired. No firing from shore batteries was observed, but 3 searchlights were trained on the ORDRONAU. 0248 firing had recommenced — directed at the searchlights, one of which was extinguished. Ranges averaged 9000 yards. In less than a minute of continuous fire, 24 more rounds had been expended and "Cease Firing" was again ordered. The Group continued to patrol the area off Empedocle while searchlights looked for it in vain (the Group was out of searchlight range). At 0500, the Group retired as planned, and returned on the night of the 10th to repeat the operation of the night before, with 11 PT boats of MTBron 15. The patrol was uneventful and no enemy surface forces threatened the screen. No gunfire was reported and our left flank remained secure.

3. On D plus 2 Day, units of MTBron 15 were ordered to participate in a diversionary operation. The squadron, with the ARBs of the Demonstration Group, demonstrated as part of Task Group 80.4 in two sections. The results are recorded under "Diversions and Demonstrations". On D plus 4, MTBron 15, together with Task Group 80.7, was ordered to operate against enemy shipping in the Western Sicilian area, including Palermo. Later, when Palermo was taken by our forces, MTBron 15 based itself on that port and operated against enemy shipping off the south Italian coast and near the Western entrance to the Straits Of Messina. On five occasions, July 24, 25, 28, 29, and August 15, it successfully engaged enemy vessels, scoring several hits. A cargo transport ship, a tug or coaster, and two F-lighters were sunk while damage to E-boats and F-lighters was reported. Minor damage only was sustained by our own craft.

4. On August 17th, six of the squadron, together with the destroyer TRIPPE, accepted the surrender of the islands of Alicudi, Filicudi, Salina, Strombely, Lipari and Vulcano. Other missions required the putting ashore of special agents behind enemy lines for sabotage and Intelligence purposes.

5. MTBron 15 performed invaluable service during Operation HUSKY. Its aggressive spirit was highly commended by CTF 88 to whom it was attached between July 28th and the end of the Sicilian campaign. Despite its limitations as to numbers of boats, it proved itself capable of fulfilling most assigned missions. Comparatively inexperienced when it arrived, the squadron quickly adapted itself by extensive and aggressive operations in the Tunisian campaign. The special and secret missions assigned to certain units were executed with proficiency and dispatch. This squadron performed outstanding duties over a period of many months and the fact that it was able so efficiently to execute operations without overhaul or rest, is worthy of considerable commendation.

6. Recommendations:

A command of the size of NavNAW, would be better served by more than one PT squadron. There were several instances when at least two more squadrons could have been employed to marked advantage. Despite requests for additional squadrons they were not forthcoming, and assistance was sought from already hard-pressed British light forces. (b) The boats of MTBron 15 were all of the old Higgins design and it was found that they are not suitable for this type of duty. They are not fast enough nor are they good sea-boats. Their armament is insufficient for many of the tasks assigned. British MTBs and MGBs, heavier gunned than our PTs (though not so fast) consider themselves under-armed.

Section XX — ENEMY NAVAL LOSSES

One submarine was sunk by BUCK while escorting convoy (several prisoners were taken); one F-lighter sunk by GHERARDI; tug or lighter, and two F-lighters reported by MTBron 15 in the North coastal waters of Sicily, comprised the only enemy losses. Several engagements between our PTs and enemy E-boats resulted in unassessable damage. U-boats sunk during HUSKY will be found recorded in the report of NCETF.

Section XXI — BEACH INTELLIGENCE

1. Available information from all sources including particularly photographic reconnaissance was worked into graphic presentations in the form of panoramic beach sketches. It was early recognized that the known presence of offshore bars made reconnaissance by scout parties of utmost importance, but the lack of trained personnel and the short period each month suitable for reconnaissance, as well as the great stretch of coast to be surveyed, restricted these operations to the few points considered typical, or where information was most lacking.

2. Depths over bars, distance of outer bar from shore and average gradient as determined by wave study of offshore photographs were found to be accurate within acceptable limits.

Section XXII — AERIAL PHOTOGRAPHS

1. The necessity of provision for photographic reconnaissance was strongly apparent. Both vertical aerial photographs commencing as far as possible before the campaign and at least one low oblique sortie is necessary to provide details and up-to-date information required.

2. One low angle oblique sortie was flown on approximately D minus 15, too late for the information which they revealed to be incorporated in the panoramic beach sketches printed for the operation. For future amphibious operations at least one oblique sortie should be flown during the early part of the planning phase in order to aid in the preparation of beach sketches; one other should be flown as late as possible before D day in order to obtain last minute information which is not ordinarily revealed by vertical photographs (location of land mines and of guns hidden in caves and cliffs). Inasmuch as the assault convoys will probably already be at sea before the latter sortie is flown, adequate provision must be made in advance for interpreting the photographs and transmitting the information obtained to the Flagships.

3. It is believed that repetitive aerial photographic reconnaissance over a restricted area, combined with one or two low oblique sorties of the same area, materially reduces the chances of effecting surprise. The value of the information revealed by the photographs is such, however, as to more than compensate for this reduction of the possibility of surprise. An additional factor to be considered is that the photographic reconnaissance program may be utilized to deceive the enemy, or keep him in doubt as to the area of our primary interest.

Section XXIII — CHART-MAPS

The gridded chart-maps, scale 1/50,000, issued by the Hydrographic Office for the use of the Western Naval Task Force, were very highly regarded by all who used them. They were of particular value to gunfire support ships; such gridded chart-maps should be prepared for probable areas of future amphibious operations. The time required to prepare, print and distribute chart-maps, combining all necessary features of both map and charts with up-to-date corrections on both, is such that they could not have been employed in an operation with a shorter planning

phase than was the case in the attack on Sicily. Recommend that in future issues the contour interval of the land portions be 25 instead of 50 meters. This will increase their usefulness for naval gunfire control.

Section XXIV — SCOUT BOATS

1. Experience to date has indicated the following requirements for scout boats:
 - (a) Low freeboard and silhouette;
 - (b) As small a bow wave as possible;
 - (c) Thoroughly muffled engines;
 - (d) Best available piloting aids including good compass, hand bearing indicator or pelorus, and shallow water echo ranging equipment.
2. It has been reported that the LCS used in Sicily was not suitable because it had a prominent silhouette and was noisy, and that the Fol-boat, towed to the line of departure by an LCS and launched from there, should be substituted in its place. It is felt that the Fol-boat would not be satisfactory because it is too slow, because it lacks maneuverability, and because it is too susceptible to the effects of wind, surf, and currents.
3. It is recommended that the LCS continue to be employed as a scout boat until a specially constructed boat becomes available.

Section XXV — SCOUTS and THE LOCATING OF BEACHES

1. Amphibious scouts used to locate the beaches on which assault units were to land were in general highly successful. It is recommended that their selection and training be emphasized and that they be employed in future amphibious operations. They cannot be expected to carry out their most important and difficult mission unless they are properly trained, equipped and specially instructed for each mission.
2. An analysis of the reports reveals that in order for the scouts to locate beaches satisfactorily and mark them for the assault waves, it is necessary that:
 - (a) Scouts be furnished with a suitable scout boat (see above);
 - (b) Scouts be supplied with night binoculars;
 - (c) Scouts, scout boat, and crew be carried on the ship from which they are to operate;
 - (d) Scouts receive from a qualified intelligence officer a thorough briefing during which the minute details of conspicuous landmarks on the beaches are correlated with the general silhouette of the whole area;
 - (e) Scout boat be the first in the water in order to give the scouts the maximum time to perform their mission;
 - (f) At about H minus 20 minutes, scouts display a directional light of sufficient intensity to be clearly visible to the control vessel and boat waves.

Section XXVI — UNDERWATER and BEACH OBSTACLES

1. No underwater enemy-placed obstacles were found on the assault beaches. A few sand bars and false beaches caused some interference with the beaching of landing boats and craft. Anti-vehicle and anti-personnel mines as well as wire were encountered above the high water mark. Naval demolition parties were available in the transports to deal with underwater obstacles, but it was unnecessary to call these parties ashore during the assault. On the afternoon of D day, one party assisted in the development of Scoglietti by removing barbed wire from the beach.
2. Recommendations:
 - (a) The recent formation of Naval Combat Demolition Units fills a need for qualified personnel to remove underwater obstacles. Underwater mine disposal should be a part of the curriculum. Although in two amphibious landings, no underwater obstacles have been found, it is believed that as beach defenses are improved by the enemy, he will make extensive use of such obstacles which we must be prepared to defeat.
 - (b) After the assault, or when the Demolition Unit has completed its underwater work, it is recommended that the Unit then report to the Naval Beach Battalion where the Unit may be employed in salvage, marking channels, and in sounding and surveying offshore.

Section XXVII — HYDROGRAPHIC RECONNAISSANCE OF BEACHES.

1. The importance of making soundings and hydrographic surveys of beaches at the earliest time after the initial assault by the hydrographic unit of Beach Parties, and of putting to practical use the results obtained, is obvious and should be stressed in all operations. The entire unloading program over the beaches depends upon the coordination of this information, and the greatest advantage being taken of the findings, to enable landing craft of all types to use the best channels of approach to the beach. The responsibility for carrying out this task rests with the Beach Party.

2. Experience in the Sicilian landing has shown that detailed performance of this task is still not sufficiently coordinated to produce the maximum results. Soundings off beaches may be made by individual units, but the details as to marking buoys for channels, beachmarkers; the coordinating of all reports of soundings into one comprehensive report covering the entire beach area, are still not sufficiently well executed.

3. In order to further assist the Beach Party hydrographic unit, Scout officers (after completion of their identification of beaches) should be assigned to the hydrographic unit and perform the tasks of soundings and beach surveys.

4. These Scout officers should be specially trained and qualified in this type of reconnaissance. Heretofore, after the beaches have been identified and the assault waves have landed, the Scouts have been used to assist control vessels, or in some cases, have remained idle. It is believed that the Scout officers can begin the soundings off beaches very soon after the completion of their primary function of beach identification, and by so doing enable the Beach Parties to make use of the findings and increase the efficiency of the landing of all types of craft on the beaches.

Section XXVIII — AEROLOGY

1. Weather during the approach was typical of Mediterranean summer conditions as shown by preliminary statistical survey, until the forenoon of D-1. At this time, as a result of steepening pressure gradient on the eastern edge of a moderate high pressure area, northwesterly winds commenced to freshen. At 0900 strong winds were forecast to continue throughout the day, slackening after dark. Surface winds developed to 30 to 37 knots in the afternoon, with moderate to rough choppy sea. At 1500, forecast conditions for H hour were: northwest winds 10-15 knots, decreasing, with inshore breakers 3-4 feet or less. Delay in H hour was not recommended because of the improved conditions anticipated. Winds continued strong until after 2000 when they gradually slackened. Conditions at 0300 D day were: wind NNW 7 knots, clear sky, Visibility 7 miles, Swell 2-3 feet high, inshore breakers (variously reported) 2-6 feet. There was no important change during the initial assault phase.

2. During the unloading and the subsequent period of maintenance over beaches, there were few occasions when operations were adversely affected by weather conditions. Afternoon sea breezes reinforcing a moderate gradient wind occasionally caused a strong breeze onshore which prevented the operation of smaller landing craft.

3. Weather conditions during the approach and the assault had the following notable effects on landing operations:

- (a) Considerable seasickness among troops, especially among those embarked in the landing craft.
- (b) Slowing of landing craft convoys; difficulty in keeping station.
- (c) Roll and pitch of transports in the choppy sea caused considerable difficulty in hoisting out and resulted in loss of some landing craft.
- (d) Debarkation of troops was delayed to some degree.
- (e) Assault formations were irregular; landing of each wave not simultaneous.
- (f) The moderate surf in some cases assisted the landing craft to pass the outer bars.
- (g) The moderate surf washing down the beach from Northwest to Southeast caused many boats to broach while beaching and unloading.

4. Complete Aerological units were available in the Flagships of Commander Western Naval Task Force (USS MONROVIA) and Commander Task Force 85 (USS ANCON); arrangements were made to have twice daily forecasts and special warnings from the major meteorological stations at Malta and Algiers for the benefit of ships not having forecasting facilities. Owing to

the crowded communication channels, these messages, which covered only a twelve hour period, were delayed at times for higher precedence traffic to such degree that they were of no use when received.

5. Decrypted synoptic weather reports from stations in Central Europe, Italy, Corsica, Sardinia and the Balkans were available from the Air Ministry stations at London and Cairo. They proved to be invaluable aids to forecasting.

6. In order to obtain adequate Meteorological reports by radio it was necessary to keep a continuous watch on two receivers. Specially trained radio operators were required to effect the necessary shifts of frequency and to copy efficiently the long broadcasts in special codes.

7. An observation unit consisting of two Aerographer's mates was established at Licata under the command of Commander Naval Advance Bases, Sicily, on D plus 5. These men took charge of the local weather station and furnished regular skilled observations of weather and surf through the period of maintenance over beaches. These reports were passed by regular communication channels to the Naval forecasting center at Algiers.

8. As a result of experience in operation HUSKY the following recommendations with regard to weather information are made:

(a) An aerological unit trained and equipped to furnish the special forecasts peculiar to amphibious operations is essential. Such unit should be in the Flagship of each Naval Commander who may be required to make decision to delay or postpone the landings.

(b) Complete weather information is essential even during the fair weather season of a theater which is known to enjoy "generally excellent" weather conditions.

(c) Forecast of conditions affecting landing operations should be disseminated expeditiously to all ships concerned throughout the periods of assault and maintenance over beaches. To accomplish this, sufficient priority must be ascribed meteorological traffic in order to insure its prompt reception.

(d) The task of copying sufficient meteorological radio traffic for a forecasting aerological unit under war time conditions requires a continuous watch of specially trained radio operators.

(e) The services of a qualified aerologist during the planning phase of an amphibious operation are essential, in order to furnish necessary climatological research, to supply forecasts for training exercises, and to organize weather facilities prior to embarkation.

(f) The aerological unit may be well and conveniently organized as part of the Intelligence Section of a general staff organization.

(g) Decrypted enemy reports are invaluable, even when delayed 12 to 18 hours. Every effort to obtain these should be made.

Section XXIX — PRISONERS OF WAR.

1. Prisoners of war with the exception of captured Italian Medical Officers, Chaplains and Italian soldiers of Sicilian birth, were evacuated to North Africa as rapidly as shipping facilities became available. Escort guards from Army M. P. Battalions accompanied prisoners to Base Section Inclosures for final processing, which was a responsibility of Commanding General NATOUSA. It was planned to carry out the evacuation of prisoners of war in all types of ships and craft except combat-loaders. Returning LST's and LCI(L)'s transported the first prisoners taken to Bizerta, Tunisia, where they were turned over to Eastern Base Section Inclosures.

2. The large number of prisoners captured during the first two or three days of the invasion, and before adequate collecting cages were established in Sicily, greatly complicated the problems of evacuation. Divisional units were turning prisoners in to beach areas faster than they could be properly assembled, checked, classified, and cleared. It became necessary for the Army to augment escort guard units by detaching for this duty combat troops arriving in follow up convoys from North Africa, and to provide additional shipping space for transportation. On the request of Army authorities the Task Force commander then decided to authorize the use of combat-loaders for this purpose, the number of prisoners to be embarked being dependent upon the sanitary facilities, the life saving capacity, and the number of casualties to be evacuated in each ship.

3. Normally the use of combat-loaders for the evacuation of prisoners is highly undesirable and, if battle casualties had been as heavy as was expected, this procedure would not have been authorized. In such case it would have been necessary for the Army to speedily set up temporary

collecting cages in the vicinity of the beaches, and to assemble and control the evacuation of prisoners coming in from field units until shipping space could be arranged.

4. Arrangements for the control of prisoner evacuation from the beaches should be made by the Army unit headquarters through the Division Beachmaster, who is in the best position to receive information from the Task Force Commander afloat to enable him to determine proper ship assignments and to thereby expeditiously clear the beach areas.

5. All ships carrying prisoners should be thoroughly fumigated as soon as prisoners are disembarked.

Section XXX — MINE SWEEPING.

1. During the theater build-up preparatory to HUSKY, the lack of escort vessels presented a serious problem. It was necessary to use Mine Sweepers for escort and patrol. As a result, little opportunity for training for the designed mission was available. The Commanding Officers of the majority of Mine Sweepers were relatively inexperienced in sweeping operations, particularly in "O" type sweeping, and had no training in night sweeping. During a two weeks training period in June, night sweeping in formation was emphasized.

2. Detailed sweeping plans for each one of the three assault areas were made by each Attack Force Commander. In general, channels and then the transport areas were swept for moored, acoustic, and magnetic mines. There was no evidence of enemy mines in any of the transport areas. Enemy minefields were encountered off Porto Empodocle and to the westward thereof. Had mines been encountered in the transport areas, serious delays and perhaps losses would have resulted as adequate sweepers were unavailable to the Attack Force Commanders.

3. During sweeping operations off Porto Empodocle on 15 July 1943, the USS STAFF was seriously disabled when a contact mine exploded under the forward engine room. As this time the STAFF was effectively engaging enemy shore batteries. The full report of this dual role is contained in the Commanding Officers letter, AM114/A16-3 Serial 209 of 7 August 1943.

4. Although intelligence reports gave no indication that the enemy was planting mines in shallow water against landing craft, the possibility was not overlooked. Experiments were conducted in the United Kingdom and at the Invasion Training Center in North Africa, but no reliable method of dealing with shallow mines was devised. It was decided that if such mines were encountered, initial losses must be accepted.

5. Recommendations.

(a) That for future operations, sufficient mine sweepers be made available to the Naval Commander to enable him to assign adequate sweepers to each Task Force Commander, and that sufficient escort and patrol vessels be assigned to the theater so that mine sweepers need not be diverted from designated missions.

(b) That effective methods of sweeping or detonating mines inside the five fathom curve be developed. As demolition methods are not always reliable, the development of a "shallow-water boat sweeper" is suggested.

Section XXXI — MINE LAYING.

1. A defensive anti-submarine minefield was laid on D plus 1 according to plan. There is no evidence that any submarines were damaged or destroyed, but the detonation of a few mines was observed on D plus 2.

2. No ships were torpedoed in the transport area.

3. Full particulars of the laying of the minefield are contained in the report of Commander Mine Division 50 to the Vice Chief of Naval Operations, A16-3 Serial 0023 of 20 August 1943.

4. During a period of poor visibility in the early morning of 14 July, 1943, two mines were detonated by the BROOKLYN. Fortunately, only minor damage was sustained, due to the fact that the mines were planted against submarines, too deep to seriously affect surface ships. Details of this incident are contained in Commander Cruiser Division Thirteen secret letter FF13-5/L11-1, Serial 0015 of 17 July, 1943.

5. The feasibility of furnishing additional protection to the transport area by laying three miles of anti-torpedo net was investigated. Early in June experiments were conducted using a LST as a net layer but the plan was discarded when it developed that ten LSTs would be required, each making three trips from the net depot to the transport area. A complete report on this trial is contained in Annex (A) to ComNavNAW Serial 00379 of 26 June 1943.

6. Recommendations:

(a) When waters adjacent to a transport area permit, a defensive minefield is the most expeditious means at present available for defending a transport area against submarine attack and for reducing the number of screening destroyers required.

(b) If ports will not be available and a transport area must be used for an appreciable length of time to maintain the Army over the beaches, it is then recommended that defensive minefield be planted as early as practicable, and that an extra light indicator net or "preparatory" net be laid, followed by an anti-torpedo net if such is feasible.

Section XXXII — NAVAL GUNFIRE

1. Detailed plans for naval supporting fire were made by each Attack Force Commander. The plans were based on the Army plan of attack, latest intelligence information, and on making full use of modern fire control and radar installations. The majority of fire support ships had fired practice bombardments at Bloodworth Island, in Chesapeake Bay, but as it was desired to rehearse the Army shore fire control parties which would control fire in Operation HUSKY, additional practices were fired in the Oran area. These practices afforded excellent training for all personnel involved, and in addition, succeeded in bringing Army and Navy personnel closer together in a mutual understanding and appreciation of the problems involved and the value of naval gunfire. In May, shore fire control parties, naval gunfire liaison officers, and naval aviators were sent from the Amphibious Force, Atlantic Fleet, to the United Kingdom to report to HMS ABERCROMBIE (a 15" Monitor which was assigned to CTF 85 for HUSKY), in order to acquaint the British with our methods of shore fire control and to work with the Monitor during practice bombardments. Provisions were made for plane spot for this ship as well as for the cruisers. A Naval Gunfire Liaison Officer was assigned to each infantry battalion and to each Army division commander. Other miscellaneous assignments of N.G.L.O.s were as follows:

- 1 with Commander Cruiser Division 8
- 1 with Commander Cruiser Division 13
- 1 with Commander Eighth Amphibious Force
- 2 with 82nd Airborne Division
- 1 aboard H.M.S. ABERCROMBIE
- 1 with KOOL (Reserve) Force.

The officers assigned to the 82nd Airborne Division were qualified parachute jumpers, volunteers, and received three weeks training in paratroop tactics prior to the operation. Unfortunately, paratroops were not dropped in the selected zones and the naval gunfire liaison officers were unable to function as planned.

2. In the interest of maintaining the element of surprise, no naval gunfire was employed until about H - 15 when the destroyers of CTF 85 (CENT area) supported and covered the first assault waves. The landing on CENT beaches was generally unopposed, due to the close support furnished by the destroyers. Prearranged fire before daylight was delivered by one cruiser and the Monitor. The flashless powder used by cruisers and destroyers was effective.

3. After daylight, fire support ships delivered counter-battery, interdiction, prearranged, deep supporting, and numerous call fires, the latter predominating. The Monitor was used to bombard the defenses of the airfield at Comiso at a range of 26,000 yards. Call fires delivered by this ship were particularly effective. The terrific bursts of the 15" bombardment projectiles were excellent deterrents.

4. All sources of information indicated that naval gunfire support was outstanding, more effective and accurate than the military commanders had believed possible. Enemy batteries were silenced, at times by direct hits; searchlights were extinguished and troop concentrations scattered. Most noteworthy is the part played by the cruisers and destroyers in turning back the German counter-attack at Gela when the Herman Goering Division almost succeeded in erasing the narrow First Infantry Division beachhead. Fire from cruisers and destroyers was largely responsible for turning the German tanks back. Several tanks were destroyed by direct hits, while others were disabled by near misses. Direct fire with top spot was successfully employed at times. In other

areas Army commanders attributed their rapid advance to objectives to the timely employment of naval gunfire against enemy troops, batteries, and tanks.

5. Communication between fire support ships and shore fire control parties in general was excellent. Air spot and air reconnaissance were effective until enemy fighters made the air untenable for the slow SOC and OS2U-3 aircraft. No direct fighter protection could be obtained for spotting planes.

6. All fire control equipment, fire control radars, and ammunition functioned exceedingly well. One report of 6" duds was received, but investigation proved the report in error. The devastating effect of the six inch high capacity projectile has now been well advertised to friend and foe. A captured German tank sergeant asked an interrogator "what is your new secret weapon that you used against our tanks?"

7. Naval guns supported the Army's advance as long as targets could be reached. Cruisers and destroyers played an important role in the successful "leap-frog" tactics employed by the 7th Army in its advances eastward to Messina along the north coast of Sicily. During that part of the Sicilian campaign, one cruiser was always on call to furnish supporting fire. Unfortunately, at times the cruiser fire was not fully exploited because, after naval guns forced the enemy to evacuate an area, it was reported that the 7th Army did not always move forward promptly and occupy the vacated area. An Army commander, when requesting naval support, should have his forces ready to move into the area as soon as naval gunfire has forced the enemy to withdraw.

8. As an outstanding example of excellent coordination of navigation and fire control personnel, a requisite for any shore bombardment mission, the following incident is cited: the SAV-ANNAH was 18,000 yards off the north coast of Sicily, weather hazy, visibility about 500 yards. A request for fire was received. The ships position was fixed by SG radar and a ranging salvo fired. The spot came in shortly: "No change, right 400 yards."

9. The following communications are of particular interest:

"From: CinC, Mediterranean.

181751B, August, 1943.

To : Commander, 8th Fleet.

Information: Comdg. Gen., 7th Army; CTF 88; CinC, Allied Forces.

We have watched with admiration the splendid and rapid advance of the 7th Army to Messina. I am very fully aware of the great contribution of the U. S. Navy to the success of that advance and I request that you will express my satisfaction to all U. S. Naval Forces who have operated on the north coast of Sicily on what has been a model of the effective application of sea power in the support of land operations.

"7th Army Headquarters
Palermo, Sicily

21 August, 1943.

My dear Admiral Davidson:

Please accept for yourself and for the officers and men of your force the sincere and heartfelt appreciation and admiration the 7th Army feels for your constant, gallant and generous assistance. Everything that we have asked from you, you have more than granted.

The gunfire support that you have provided has been of inestimable value, and it is my considered opinion that the three landing operations, carried on by you, were of critical importance in the rapid and successful advance on Messina.

It is our hope that in future operations we shall again have the pleasure of being associated with you and your men.

I have forwarded a copy of this letter to Admiral Hewitt with the request that it be made of record.

Most sincerely,

G. S. PATTON, Jr.,
Lieut. General, U. S. Army,
Commanding."

10. Recommendations:

- (a) Prior to any landing on a defended, hostile shore, prepare the beaches by naval bombardment. Employ destroyers to support closely and cover the assault waves as was done by TF 85.
- (b) In the selection of beaches, consideration must be given to sea room for fire support areas. Interference between adjacent fire support groups is to be avoided.
- (c) A six inch high capacity projectile fitted with Mark 32 fuze will produce "automatic" air burst and will be extremely effective against personnel and lightly armored vehicles.
- (d) Provide a land plane, for spotting naval gunfire, which is capable of defending itself against enemy fighters. The Army P-51 appears to be such a plane.
- (e) An ammunition ship, loaded with all types of ammunition, but principally bombardment for cruisers and AAC for destroyers, should be stationed in a rear area where any type of ship may replenish any type of ammunition. If the employment of fire support ships is such that time will not permit replenishment in a rear area, then provide transportation to the assault area for reserve ammunition. An LST will carry approximately 700 tons of ammunition.
- (f) Add to the curriculum of the naval gunfire liaison officer school some of the elements of Ranger training, particularly that portion which simulates actual combat conditions, in order to condition and prepare him for execution of his mission while under fire.
- (g) Temporarily increase the allowance to 80 of white phosphorus projectiles for destroyers assigned fire support missions. White phosphorous smoke is an excellent demoralizer.

Section XXXIII — AA DEFENSE and AIRCRAFT RECOGNITION

1. Initially, AA fire discipline was poor, particularly in the smaller ships and landing craft. It was apparent that enough emphasis had not been placed by some commanding officers on aircraft recognition, as on numerous occasions fire was opened on Spitfires and P-40's. Much of the fire on friendly planes is attributed to initial nervousness and to the fact that fighter cover was inadequate. By D plus 2, fire discipline had improved. Fighter bombers, usually FW-190s, made frequent sorties, so the air picture was generally confused. At times friendly fighters were seen at about 4,000 feet while enemy aircraft bombed the assault area from 15,000 to 20,000 feet. The need for more explicit anti-aircraft rules for transport areas was very evident.
2. Ships which had on board graduates of the Renshaw School at Columbus, Ohio, reported excellent fire discipline. The majority of these officers were assigned before the ships left the United States. Instruction in aircraft identification was held at every opportunity and the results were evident.
3. In general, 20 MM guns were employed against aircraft well out of range. This was true, particularly at night, when many guns fired blind endangering personnel on adjacent ships. Fire discipline of the 40 MM guns was better, while that of the 5" batteries was generally excellent. Commander Cruiser Division Eight reports the recent ordalt which permits radar control of the 40 MM guns a success. A separate report on this subject has been forwarded.
4. Numerous enemy aircraft were shot down by anti-aircraft fire, but an accurate individual ship account is impossible, as enemy aircraft were normally engaged by several ships simultaneously. On D plus 1, the air defenses of the DIME area were augmented by the arrival of HMS COLOMBO, an anti-aircraft cruiser.
5. The control of AA fire at night is an unsolved problem. Radar control for AA batteries offers only a partial solution because, in an amphibious operation, the transport area is near land where radar interception is unreliable. The establishment of Gun Defended Areas and Inner Artillery Zones as employed by the British, coupled with controlled night fighter aircraft, appears to offer the best present solution to the problem.
6. The use of tracer ammunition at night is a controversial subject. It is the belief that a heavy barrage such as can be put up by transports, landing craft, and combatant ships in a transport area, succeeds in keeping the attacking planes up where they must resort to area bombing. On the other hand, reports have been received which indicate that enemy bombers seek

shelter in our flak when chased by night fighters - apparently a case of the lesser of two evils. Enemy planes are known to direct bombs against targets which disclose their importance by the volume of their fire.

7. Smoke was not effectively employed to cover the transport area when air attack was imminent. As mentioned above, radar warning when enemy aircraft approach from over land is unreliable and about fifteen minutes is the minimum time required to smoke a transport area, provided smoke boats are standing-by. A large transport area can be effectively covered with smoke in fifteen minutes, provided smoke will lie.

8. Recommendations:

(a) Assign Identification School graduates to all destroyers and larger ships and make their services available at bases or training centers to the personnel of all other ships and craft. Require all commanding officers to submit monthly reports on the number of officers and men under instruction in aircraft identification. Adequate instruction can never reach too many officers and men.

(b) Provide non-tracer 40MM projectiles for use of radar controlled 40MM guns at night.

(c) Prohibit the use of 20MM guns at night unless directly attacked by aircraft which can be seen and are within range.

(d) Develop a self-destroying 20 MM projectile.

(e) In conjunction with Army AA personnel, and the Army Air Force, develop rules for the defenses of a transport area which will define limits for AA fire and altitude restrictions for aircraft. (This problem is under study at Allied Force Headquarters.)

(f) Provide all APAs, AKAs, and Merchant ships which will be in the transport area with sufficient Mark 3 smoke pots to last while the ships remain in the area. It is estimated that 200 Mark 3 smoke pots per ship should suffice.

Section XXXIV — ENEMY AIR ACTIVITIES

1. During the three days from 0245 on 10 July through 1815 on 12 July 1943, (D through D plus 2), approximately 200 enemy flights were plotted on the operations board. Over half of these flights were inland flights which did not reach the CENT, DIME or JOSS areas. Of the 89 plotted enemy raids aimed at the assault areas, 26 were intercepted and driven off prior to entering the areas. The remaining 63 raids entered the areas but were, in most cases, engaged by the fighter cover.

2. Enemy raids consisted of all types: strafing, dive-bombing, low-medium and high-level bombing and reconnaissance flights. A great deal of trouble was experienced from enemy raids strafing and bombing the beaches and beached landing craft. These raids came in very low, down the valleys, and then darted over the ridge of hills onto the beaches. Since these raids could not be picked up by the radar, and aircraft lookouts were handicapped by the smoke and haze over the beaches, they were surprise attacks. These raids were frequent, and are not included in the 89 raids plotted by radar.

3. These attacks were sometimes coordinated with high-level bombing of shipping in the transport areas, the attention of all gunners then being concentrated on the beaches. These high-level attacks were in most cases delivered out of the sun by formations of from three to as many as twenty-seven aircraft. The accuracy of these attacks was poor and the resultant damage not great.

4. The night attacks were preceded by the dropping of flares in parallel lines. The flares were effective in that they blinded the gunners, but it is believed that they did not illuminate the shipping sufficiently to make good targets. The losses attributable to night attacks were slight. The most disturbing effect of these raids was when the enemy aircraft would fly close to the water between the transports. This caused the ships to fire toward each other with resultant confusion. This type of attack also led to the suspicion of aircraft mine laying, necessitating immediate exploratory sweeps as a safety measure.

Section XXXV — JOINT AIR PLAN

1. The Joint Air Plan covered in broad general terms all air operations necessary to an amphibious operation. The role of the air forces as outlined in the plan were as follows:

- (a) The destruction or neutralization of enemy air forces within range of the operations.
- (b) Air operations intended to prepare the way for the assault and assist its execution.
- (c) Support of the naval operations.
- (d) Protection of the assault convoys.
- (e) Support of the assault forces.
- (f) The air operations necessary to launch the paratroop attacks included in the Plan.
- (g) Air attack on enemy shipping and naval forces.
- (h) The protection of Northwest Africa, and of the captured areas of Sicily, against air attack.
- (i) Participating in the cover plan and in diversionary operations aimed at keeping the enemy air forces as widely dispersed as possible.

The detailed plans for each of the above roles were made the subject of further plans submitted by the lower echelons.

2. The joint plan provided that the Air Commander-in-Chief from a Command Post near Tunis would control all air operations during HUSKY. This meant that there was no officer at the scene of operations with any authority to control air activity during the assault. Due to the unavoidable delay in communications with headquarters established in the rear, this resulted in an unsatisfactory situation as urgent requests regarding air cover or air support could not be acted on for several hours.

3. Role (a) was, by and large, successful. However, the enemy air forces were fairly active from D through D plus 2 day—(See comments on "Enemy Air Activities").

Role (b) was successful. Enemy targets were well selected prior to the amphibious attack.

Role (c) was not given sufficient importance nor were the final plans completed until the assault convoys had already put to sea. This resulted in improper briefing of personnel with resulting confusion and inefficient employment of the aircraft assigned to the protection of the assault areas. (See comments on "Fighter Cover and Air Support").

Role (d) was the most carefully planned and the most successfully executed of all. The Coastal Air Force deserves great credit for the planning and execution of the protection of the many convoys involved in the operation.

Role (e) was non-existent as understood by the Navy during the assault phase. (See comments on "Air Support").

Role (f) was only partially successful. There was not sufficiently close cooperation on the part of the other services during the planning stage. The plans were not completed until the assault convoys had put to sea and strict radio silence prevented the proper dissemination of information. Had the route to be flown by the transports been submitted to the Navy for approval, a strong objection would have been made. Never would the Navy have agreed to routing the transports over convoys and the assault areas. Although the planned route had been requested on numerous occasions, it was not submitted, and the Navy only learned of it when it was already too late for any changes to be made. Errors in aircraft navigation plus lack of timely information resulted in such regrettable instances as troop carrier aircraft being shot down by both ship and beach AA fire.

Role (g). No comment.

Role (h). It must be assumed that adequate protection was provided Northwest Africa and the captured areas of Sicily. Enemy air activity over these areas was light at all times and damage sustained was correspondingly very light.

Role (i) was also successful since the enemy was never able to muster sufficient strength to seriously endanger any of the operations by air attack.

4. No provisions were made in the plan to regulate the flight of friendly aircraft in the assault areas and for the control of AA fire. This resulted in unnecessary red alerts, when friendly planes approached the area without being identified as friendly, and in excessive AA fire on friendly planes.

5. Recommendations:

For future operations of this nature all planning officers should be geographically located in one place; more emphasis should be placed on the protection of the assault areas and

close air support of the initial assault phase; a senior air officer with the authority to command that portion of the air forces assigned to protection and support of the assault phase, should be placed on board the Flagship. All details of the plan should be distributed sufficiently in advance of the operation, in order that the personnel entrusted with the execution of the plan may be thoroughly informed of the operation.

Section XXXVI — FIGHTER COVER and AIR SUPPORT

1. While it is believed that the Tactical Air Force made a strong effort to provide continual daylight cover over the assault areas and the beaches, the amount of protection was insufficient and not commensurate with the naval effort and the value of ships, men and material involved.

2. The average number of fighters over each of the areas, CENT, DIME and JOSS was approximately ten aircraft. There were several "holidays" in the schedule when no cover existed over one or two of the areas and, on two occasions, there were no fighters in any of the areas. To provide this cover approximately 440 sorties were made each day; two-thirds from Malta, one-third from Pantelleria. Spitfires operated from Malta and P-40's from Pantelleria.

3. With the limited amount of cover, patrols could be maintained at one level only, thus making interception of both high and low-level attacks difficult.

4. Sufficient fighter aircraft were present in the theater to provide additional cover. The Air Forces, however, stated that additional aircraft could not be made available for the following reasons:

- (1) Limited operational capacity of Malta and Pantelleria.
- (2) Great distances from operating fields to assault areas, hence short time of cover provided by each sortie.
- (3) The large commitments for fighter escort for the many bombing missions.

Cover at night was provided by night fighters of the Coastal Air Force controlled by G. C. I. equipment installed in LST's.

5. Close support by aircraft in amphibious operations, as understood by the Navy, did not exist in this theater of operations. The opinion of the North African Tactical Air Force is that close support by aircraft is not practicable. If close support is requested, and granted, it cannot be delivered for at least two hours. In one of the few close air support requests that were granted in the invasion of Sicily, the time lag was twelve hours. Under these conditions the shore air support liaison parties have little or no value.

6. Close support by aircraft and spotting for Naval gunfire in amphibious assaults are considered essential. At Gela, while speaking of close aircraft support, one U. S. Army General was heard to remark, "What we need now is some U. S. Naval Aviation."

7. Though the Army Air Officer aboard the MONROVIA was on the same echelon as the Naval Commander Western Task Force and the Commanding General Seventh Army, he had no authority over any aircraft except those entering the assault areas assigned to Fighter cover and the 111th Observation Squadron. Therefore all requests for additional aircraft for fighter cover or close support of the ground forces had to be relayed to Tactical Air Force Headquarters located near Tunis for their consideration.

8. Recommendations:

(a) For future operations additional emphasis should be placed on the protection of shipping and the beaches in the assault areas. During the critical stage, until the Army is firmly established ashore, persistent and determined enemy air attacks may take such a heavy toll of shipping, men and materials as to make the operation a failure. In order to make available additional fighter aircraft, longer range planes such as the P-38 should be employed, belly tanks should be used when possible, and bombing missions either curtailed or their escort reduced.

(b) Protective patrols should be flown at three levels about seven or eight miles inland from the beaches, in order to be able to intercept any form of threatening attack. With many friendly aircraft in the area, valuable reconnaissance can be made and close support of ground operations by the fighter cover is possible.

(c) The Air Officer aboard the Flagship should have the authority to order additional aircraft for protection of the assault areas and close support missions of ground forces.

In this connection it is proposed that in the event of Naval Aviation not being available, bombing flights with previously assigned targets should report to the Flagship by VHF radio on approaching the assault area to inquire whether there is not a more important target of opportunity than the previously assigned mission. The Air Officer, receiving the reports from reconnaissance flights and from the ground forces, would be in an excellent position to evaluate the importance of the targets and would then be able to order attacks on the enemy at the time they are needed, without referring the matter to the Headquarters in the rear for consideration.

Section XXXVII — FIGHTER DIRECTOR CONTROL

1. Army Air Corps fighter director units were placed on board all Flagships. These units were sent over from the United States especially for this operation. While they were composed of highly trained personnel, many being instructors in fighter direction, none had experience in a war zone. They were also hurriedly gathered together and had no opportunity to be trained as a team. Upon arrival in this theater shortages of certain types of personnel were discovered which were supplied from personnel in the theater.

2. Notwithstanding the above handicaps, and the fact that the plan covering the fighter protection of the assault areas was not completed until after the assault convoys put to sea, it is my considered opinion that a most creditable performance was turned in by the fighter director units, particularly by the unit aboard the USS MONROVIA.

3. Fighter director facilities were in general inadequate. Those in the BISCAYNE and SAMUEL CHASE were wholly improvised in this theater, utilizing such Army VHF equipment and such spaces as could be made available. The elementary facilities in the MONROVIA were improved in so far as time and available equipment permitted. As a general rule the location of the Fighter Director room was poor, it was far too small, and the poor ventilation seriously impaired the efficiency of the operating personnel. The SCR 522 VHF equipment installed by the Air Force proved unsatisfactory for fighter direction purposes. It failed in some respects in all three ships, and in the case of the BISCAYNE did not provide communication with the fighter cover. The facilities in the ANCON, an AGC, were considered satisfactory by CTF 85 for the fighter control task assigned that ship.

4. Fighter patrol was established at 0500 on D day. It was immediately contacted over VHF radio and was continually controlled throughout the landing operation. Fighter directors were ordered to first protect the shipping, second the beaches, and third, to provide Air Support for ground operations.

5. From 0245 on 10 July 1943 to 1815 on 12 July 1943 approximately 200 enemy flights were plotted on our operations board. Not all of these were in the JOSS, DIME, and CENT areas, as about half of them were inland flights which never reached the fighter-covered areas.

6. Eighty-nine enemy raids were aimed at the assault areas, not counting numerous enemy raids which sneaked down the valleys and which were not picked up by the radar. Twenty-six of the plotted raids were intercepted, engaged, and driven off by fighter direction of the covering patrols before they reached the assault areas. Sixty-three plotted raids entered the areas but were in most cases, engaged by the protecting cover.

7. A great deal of trouble was experienced from planes strafing and bombing the beaches and beached landing craft. These came in very low, down valleys, and then darted over the ridge of hills onto the beaches. These raids could not be picked up by radar, and visual observers were handicapped by the smoke and haze which hung over the beaches. Because of severe AA fire during their attempts to engage low-flying aircraft over the beaches and shipping, our cover was not over-anxious to engage this type of raid. The AA situation, however, was greatly improved by attempting to control the AA fire of all ships from the Flagship over the TBS circuit.

8. On a few occasions the fighter director ordered part of the fighter cover on reconnaissance missions.

9. For future operations the following are recommended:

(a) That separate fighter control ships be provided and equipped with G. C. I. for the control of night fighters. This will enable the fighter director to place the ship in the most advantageous position from the point of view of radar coverage.

(b) That ample room, ventilation and satisfactory communication facilities be provided. The personnel and equipment will not function efficiently where excessive heat is encountered.

(c) That the fighter director personnel be permanently assigned to a ship and trained and kept as a team. The senior officer of the unit should have the authority to promote and discipline personnel under his command.

(d) That the senior fighter director officer in any operation be a member of the Commander's staff and assist in making plans for fighter direction, radar coverage, communications, fighter cover, reconnaissance flights, close air support, and control of AA fire.

Section XXXVIII — SPOTTING PLANES

1. Air spotting of naval gunfire contributed greatly to the success of the operation and must be considered as a necessity in all amphibious operations. The spotting planes reported the movement of enemy tanks which later counter-attacked and were the main threat to the success of the operation in DIME area. Air spot contributed directly to the destruction of shore batteries and several enemy tanks.

2. Fighter cover to assault areas was given primary consideration and with the number of fighters available, none could be spared for direct escort of cruiser spotting planes. Request for fighter escort to cruiser planes was made prior to this operation, but was not granted. Request was made for suitable land-based aircraft to spot for cruiser gunfire, but A. O. C. Mediterranean Air Command stated none was available. Cruiser planes were operated from their ships with varying success. In general it was proved that use of present type cruiser planes for spotting, when opposed by enemy fighter aircraft, is either impracticable or excessively costly. Direct fighter escort to present type cruiser planes is not considered satisfactory. It is strongly recommended that land or carrier-based naval aircraft that can serve the dual purpose of spotting and afford self protection be used in future operations.

Section XXXIX — NAVAL AIR LIAISON OFFICERS

1. Naval Air Liaison Officers were not employed in the operation. Task Force 85 was equipped to provide this service but, due to the lack of Naval Aviation and the almost complete lack of Air Support as understood by the Navy, there was no opportunity to make use of Air Liaison Officers.

However, the use of this service is strongly recommended in all amphibious operations provided that Naval Aviation be employed for close support. Should amphibious operations be planned without the aid of Naval Aviation, it is recommended that the supporting air forces place dive bombers at the disposal of the Naval Commander to carry out vital close support missions until such time as the ground forces are firmly established ashore. In such case, Naval Air Liaison Officers would be required.

Section XL — STAFF ORGANIZATION AND OPERATION

1. It has been recommended by one Task Force Commander that the N-2 and N-3 sections be combined into a joint section in which N-2 functions under N-3. No reasons were adduced to support such a recommendation. It has been the experience of this command that in the planning and execution of large amphibious operations, the duties of the Intelligence Officer are so numerous and so diverse that a separate section conforming to Army and Air practice is vitally necessary.

2. Attention is invited to the fact that the composition and functioning of the staff of a Naval Attack Force Commander in an amphibious operation will vary according to the size of the landing force embarked, i.e., division, corps, or army. The composition and especially the functioning will further vary in accordance with the extent to which the commander exercises visual observation of his forces. When landing a reinforced division, he can normally see the operation as a whole. When landing a corps or an army, visual observation is not possible and he is dependent on situation maps and charts. Consequently he relies much more heavily on his staff.

3. The staff of a Naval Attack Force Commander should engage in several exercises in staff operation aboard ship before going into action. The exercises should be based on staff instructions which give the action station and duties of each staff officer.

Section XLI — PRESS RELATIONS

1. Correspondents accredited to both the Army and Navy frequently requested permission to transmit copy via naval communications. This was not granted in view of the Commander in Chief's order that no press copy would be transmitted by radio from ships. Normally, the press should obtain news releases from the rear echelon based on the Combined Situation-Intelligence Reports sent back periodically from the assault area. Those may be supplemented by background material in form of official despatches to the Press Relations Officer rear echelon for information but not for release. In addition, arrangements should be made aboard the principal Flagships whereby correspondents may send back copy, suitably addressed and labelled, via the first returning ship, craft, or airplane.

2. In general it is believed that insufficient information was released concerning the naval aspects of the invasion of Sicily, and particularly of the activities of the Western Naval Task Force, to adequately convey to the families of U. S. Navy personnel, the public at large, and the Congress a proper realization of the magnitude of the U. S. Naval effort in this theater.

PART V

MATERIAL AND LOGISTICS

Section I — PLANNING, PREPARATION AND TRAINING PERIOD

1. Commencing 21 February, 1943, after a detailed survey of available sites, Amphibious Training and Repair Bases were established as follows: Port Lyautey, French Morocco; Nemours, Beni-Saf, Arzew, Mostaganem, Tenes and Cherchell, Algeria. Beni-Saf was designated as the main repair base for PCs, SCs, and YMSs. The Base at Port Lyautey was abandoned as soon as facilities inside the Mediterranean were sufficiently equipped to handle the additional craft. Repair facilities at the Naval Operating Base, Oran, Algeria, augmented by the facilities of the U. S. S. DELTA in March, were utilized to the fullest extent.
2. Large quantities of spare parts and equipment consigned to this theater were loaded in merchant ships and in both United States and British LSTs whose destinations were not in conformance with that of the cargo. The result was serious delay and enormous trans-shipment to effect proper delivery. LCT(5)s were largely used in transferring material. While this was most satisfactory and expeditious, it did result in loss of time and training and increased the maintenance problem of LCT(5)s considerably.
3. During the latter part of April, LCT(5)s were again diverted from training to provide valuable assistance to the U. S. Army in landing operations in the Tunisian campaign.
4. Early in May, the advance party of Commander Landing Craft and Bases, Northwest African Waters, entered Tunisia and established Advanced Amphibious Training Bases at Bizerta and La Goulette. LSTs, LCI(L)s and LCT(5)s were used to transfer personnel and material from Algerian Bases to the new Tunisian Bases. These craft were based from then on at Bizerta and La Goulette. The U. S. S. ACHELOUS (ARL1) arrived at Bizerta on 4 June and the U. S. S. DELTA on 24 June. One Advanced Base Mobile Repair Unit was retained at Arzew and the other which arrived immediately prior to the operation was based at Bizerta. PT Base No. 12 was also located at Bizerta.
5. The U. S. S. VULCAN was based at Algiers, Algeria, from 2 July primarily as repair ship for cruisers and destroyers temporarily assigned to the EIGHTH Fleet.
6. Thirteen (13) 250 ton and six (6) 350 ton pontoon dry-docks were received and were allotted to the United States and British forces as operational requirements of landing craft and small ships required. All of these, however, were not assembled prior to the operation due to late arrival in the theater. The 250 ton dry-docks were used for LCT(5)s and PTs. The 350 ton dry-docks were used for LCI(L)s and SCs, although not entirely satisfactory for the former due to the discrepancy in length. One (1) 100 ton pontoon dry-dock was assembled at PT Base No. 12 at Bizerta for PTs and ARBs.
7. Detailed plans for the establishment of Advanced Bases in Sicily and studies of harbors and existing petroleum installations were made to determine the requirements for specialized equipment to supplement the standard functional components of Lions and Cubs which had been set up.
8. Constant and harmonious planning was carried out with representative of the British Navy and the U. S. Army on the innumerable and detailed logistic problems which arose.
9. The following brief outline of fueling arrangements is indicative of the magnitude of the operation:
 - (a) Seven (7) fleet tankers (AO) (78,000 tons of fuel oil) were required to fuel the larger ships of the Western Naval Task Force upon their arrival in the Mediterranean.
 - (b) Small diesel powered ships and all landing craft were normally fueled at Bizerta and La Goulette.
 - (c) It was estimated that 212,000 tons of fuel oil and 60,000 tons of diesel oil might be required for the period D-day to D plus 21. Actually on D-day, shore stocks alone approximated these figures and in addition, large and small tankers were strategically placed to provide expeditious alongside fueling at ports near the theater of operations. An additional large reserve was maintained at Casablanca, French Morocco.

10. Fresh, refrigerated and dry provisions were obtained from the U. S. Army in accordance with existing instructions. It was necessary, however, to augment these by provisions loaded in the U. S. S. TARAZED which arrived late in June.

11. Clothing and small stores, particularly items required for survivors, were stocked at Oran, Bizerta and La Goulette. In addition each APA, XAP and AKA had been directed to provide additional stocks of these items prior to departure from the United States.

12. It is of interest to note that a total of 601 ships and landing craft and 1124 ship-borne landing craft were assigned to the Western Naval Task Force. These figures include 32 Liberty Ships and 96 LCM(3)s carried by them which arrived off the Southern beaches between D plus 1 and D plus 8.

Section II — REPAIR FACILITIES, DRY-DOCKS and PETROLEUM INSTALLATIONS IN SICILY

1. Bolted tanks, hose and pertinent equipment were loaded in the assault and first follow-up LST convoys to provide emergency diesel oil storage on the beach at Gela. This was required to fuel landing craft remaining in that area to unload merchant ship convoys. Additional tanks were erected at Licata. The fuel installation at Porto Empodocle was found almost intact, was expeditiously repaired and placed in operation.

2. At Palermo, the large Italian Navy underground fuel oil installation comprising 12 tanks for a total storage of over 925,000 barrels was intact except for demolition of piping and valves at manifolds and bomb damage to piping between pump house and the port area. Many unexploded demolition charges were removed and repairs effected in a most commendable manner. Approximately 100,000 tons of fuel oil are now in shore storage at Palermo and the extension of the pipe line along the outer breakwater has been completed.

3. Sicilian port facilities - The use of the ports of Licata, Porto Empodocle and Marsala was limited to short periods for the temporary maintenance of the Seventh Army. Trapani was too badly damaged to be of any assistance during the early stages of the invasion and was not required after the capture of Palermo.

4. The repair facilities at Palermo were badly damaged by enemy and allied bombing. Many machine tools had been removed and there was evidence of further intended removal of large quantities of ship construction, repair and maintenance supplies and equipment, the remaining stocks of which were large. The 1000 ton floating dry-dock (229'6" x 47'10" x 18') was found to be in good operating condition. The graving dock, approximately 538 feet long, 78 feet wide, was damaged, both caissons were damaged and sunk inside the dock as was an Italian destroyer. One caisson has since been repaired, the dock is now being pumped out and the estimated date of readiness for operation is 15 November, 1943. One 250 ton pontoon dry-dock was towed from Bizerta to Licata and subsequently to Palermo. A portion of the facilities of PT Base No. 12 was also transferred to Palermo to assist in the maintenance of PTs operating in that area.

Section III — EXPERIMENTAL and DEVELOPMENT WORK UNDERTAKEN TO OVERCOME PROBLEMS and CONDITIONS ARISING DURING THE PLANNING PERIOD

1. The Commander Western Naval Task Force, individual Task Force Commanders, and the Commanders of Regimental Combat Teams embarked in LCI(L)s, each required a "Headquarters" Ship. The U. S. S. ANCON (AGC4) assigned to Task Force 85, was the only ship so fitted. It was necessary therefore, to alter and partially equip within the short period of time remaining and insofar as equipment was available, the following ships and craft for this duty: U. S. S. MONROVIA (APA31), U. S. S. SAMUEL CHASE (APA26), U. S. S. BISCAYNE (AVP11) and eight (8) LCI(L)s. The major portion of this work was accomplished by the U. S. S. DELTA (AR9).

2. In addition to the anticipated amount of voyage repairs required by such a large number of small ships and craft after the Atlantic crossing, it was necessary to effect several alterations to landing ships and craft to enable them to carry out their assigned duties. Of these the following are of particular interest:

- (a) Installed new Arma Type Gyro Compasses in LCI(L)s.
- (b) Installed new Magnesyn Compasses in LCI(L)s, LCT(5)s and ship-borne landing craft.

(c) Installed cross-connection line between Fire and Bilge Pump and Fresh Water tanks in twenty (20) LSTs to permit these pumps being used for discharge of potable water to shore tankage through 2-1/2" fire hose. In cases where LSTs were unloading over pontoon causeways, the length of fire hose was as much as 750 feet.

(d) (1) Installed necessary fittings and provided gear on ten (10) LSTs to side-carry pontoon causeways (1 - 175 foot section on each side).

(2) Enlarged hole on under side of LST ramps to permit LSTs to pivot on King post welded to pontoon causeways.

(e) Installed portable bunks in after end of tank deck of LSTs fitted with six (6) davits. These additional bunks were required for berthing additional assault troops embarked in Six (6) Davit LSTs and were subsequently of value in the evacuation of casualties. Late arrival of material prevented altering all Six (6) Davit LSTs.

(f) Altered bulwarks on each side of LCT(5)s providing portable section to permit side-loading and unloading of these craft.

(g) LST 355 was fitted with a special ramp to properly load and place GCI equipment on the forecastle.

(h) LST 386 was fitted with a special "flight deck" for U. S. Army "Cub" observation planes. Two (2) planes were carried on the runway and two (2) on the main deck. After the first two were flown off, the remaining two were placed on the runway and flown off. The installation of the runway prevented the use of the 40 mm. gun forward. Two (2) 20 mm. guns with portable mounts were provided by the Army to offset the loss of the 40 mm. gun. It is of interest to note that LST 386 also carried a cargo of mules on the main deck under the runway.

Section IV — LOSSES, DAMAGE INCURRED, RELIABILITY OF SHIPS and CRAFT, and RECOMMENDED ALTERATIONS.

1. Losses:

<u>Ship</u>	<u>Cause</u>
U. S. S. MADDOX (DD622)	Bombed.
U. S. S. SENTINEL (AM113)	Bombed.
U. S. S. SC 694 and 696	Subsequent to the assault were bombed and sunk in the harbor of Palermo.
U. S. S. LST 158	Bombed.
U. S. S. LST 313	Bombed.
U. S. S. LST 318	Bombed during Leap-frog landing East of Palermo subsequent to assault.
U. S. S. LCI(L) 1	Damaged by shell fire in assault. Subsequently bombed and sunk during air raid in Bizerta.
U. S. S. LCT(5) 154	Damaged. Subsequently lost while under tow enroute Bizerta.
U. S. S. LCT(5) 311	Damaged. Subsequently lost while under tow enroute Bizerta.
S. S. ROBERT ROWAN	Bombed.

2. Damages:

<u>Ship</u>	<u>Cause</u>	<u>Remarks</u>
U. S. S. BROOKLYN (CL40)	Mined	Fighting efficiency not impaired. Subsequently repaired in U. S.
U. S. S. SWANSON (DD443)	Collision	Temporary repairs completed Malta 20 July. Returned to U. S. under own power.
U. S. S. ROE (DD418)	Collision	Temporary repairs completed Oran 24 July. Returned to U. S. under own power.
U. S. S. SHUBRICK (DD639)	Bombed	Off Palermo while on patrol subsequent to the assault on Sicily. Temporary repairs made at Malta. Returned to U. S. under own power.

<u>Ship</u>	<u>Cause</u>	<u>Remarks</u>
U. S. S. MAYRANT (DD402)	Bombed	Off Palermo while on patrol subsequent to assault on Sicily. Temporary repairs to be completed Malta about 15 November. Will return to U. S. under own power.
U. S. S. STAFF (AM114)	Mined	Temporary repairs made at Licata and Oran. Now being towed to U. S.
U. S. S. SKILL (AM115)	Near Bomb miss	Repaired
U. S. S. STRIVE (AM117)	Near Bomb miss	Repaired
U. S. S. BARNETT (APA5)	Bombed	Temporary repairs made by U. S. S. VULCAN.
U. S. S. ORIZABA (AP24)	Bombed	Temporary repairs made by U. S. S. VULCAN.
U. S. S. DICKMAN (APA13)	Near Bomb miss	Fighting efficiency not impaired.
U. S. S. BETELGEUSE (AKA11)		Engine derangement. No. 2 main cross-head bearing burnt out. Temporary repairs made by U. S. S. VULCAN. Returned to U. S. under own power for engine overhaul.
U. S. S. PC 562	Mined	Temporary repairs made at Licata. Towed to Oran. Now awaiting materials.
U. S. S. PC 621	Collision	Repaired at Oran.
U. S. S. SC 1030	Collision	Towed to Oran. Now awaiting materials.
U. S. S. LST 3	Bombed	Off San Stefano during Leap-frog landing subsequent to assault. Towed to Bizerta. To be repaired when dry-docking priorities permit.
U. S. S. LST 312	Near Bomb miss	Repaired.
U. S. S. LST 326	Damaged	To be dry-docked at Bizerta when priorities permit.
U. S. S. LST 345	Collision	Repaired.
U. S. S. LCT(5) 185	Broke in half enroute Bizerta	New midship section to be installed at La Goulette.

In addition the following Landing Ships and Craft received minor damage resulting from shell fire and/or beaching.

LCI(L)

No. 5	No. 188
11	211
17	217
35	220
88	349

LCT(5)

No. 18	219
22	222
140	223
159	242
197	244
206	332
211	340
213	342
218	444

3. In addition to the above, the following table summarizes losses of ship-borne landing craft:

Type	Sunk	Stranded not Salvageable	Salvaged but Beyond Repair in Theatre
LCM (3)	1	22	0
LCS (S)	1	2	0
LCVP	82	69	10

Note: Possibility some duplication exists in number of LCVPs reported sunk and stranded, not salvageable.

4. The material performance and particularly the reliability of engineering plants of ships and craft was excellent. Except for minor derangements the only serious casualty was the breakdown of the U.S.S. BETELGEUSE (AKA11). The cause was failure of the cross-head bearing on No. 2 cylinder. Previous failures had occurred and were due to mis-alignment of main engine as a result of near bomb miss and grounding in the Pacific. Temporary repairs were made and the BETELGEUSE returned to the United States under her own power for major overhaul.

5. LSTs

(a) Remarks. The only serious material failures were ramp chain and boats davits. Corrective action has been taken by the Chief of the Bureau of Ships to increase the safety factor of the Welin Davits.

(b) Recommendations:

- (1) Strengthen ramp chains and fittings as necessary.
- (2) Install 10,000 gallon per day distilling plant.
- (3) Install five (5) ton boom with winch on main deck to serve after hatch.
- (4) Install cross-connection between Fire and Bilge pumps and Fresh Water tanks to discharge potable water to shore tankage.
- (5) Install discharge piping from Fire and Bilge pumps to bow with 2-1/2" hose connection to permit discharge of potable water to shore tankage.
- (6) Install fittings as required to fly barrage balloons.
- (7) Provide stowage for barrage balloons, helium gas cylinders and accessories.
- (8) Install 150 portable bunks in after end of tank deck on all six (6) Davits LSTs.
- (9) Install fittings and provide gear on LSTs designated to side-carry pontoon causeways. A detailed report on this subject is being prepared by Commander Landing Craft and Bases, Northwest African Waters, and will be forwarded under separate cover.
- (10) Increase diameter of one forward inboard hole on bottom of ramp from 6" to 12" to provide socket for King pin on causeway. The ramp can be then lowered over King pin forming a pivot connection.

6. LCI(L)s

(a) Remarks. The weight of ramps and present method of handling is not satisfactory. Ramps are too heavy and cumbersome to man-handle. Ramps were lost due to difficulty in retracting, ramp brakes did not hold and in heavy seas ramps were thrown back off the rollers.

(b) Recommendations:

- (1) Lighten and lengthen ramps and provide suitable power retraction.
- (2) The width of the improved ramp should be determined, subject to the inherent limitations involved, by joint agreement with U. S. Army and Marine Corps as to types and dimensions of equipment to be unloaded by assault troops embarked in LCI(L)s.
- (3) Detailed comments and recommendations covering changes in design of LCI(L)s have been submitted previously by despatch.

7. LCT(5)s.

(a) Remarks. The duties assigned these craft have been far more extensive than were contemplated for this type. In spite of numerous engineering derangements and considering the lack of experienced personnel, their performance has been remarkable. The loss of ramps has been serious and several of these craft have developed structural weakness which has required installation of additional strength members.

(b) Recommendations.

- (1) Strengthen ramp chains and fittings as necessary.

(2) Strengthen hull to prevent working and buckling in heavy seas. In cases where these craft are shipped in sections, strength members should be so designed that they may be readily installed after assembly.

(3) Construct bulwarks with portable section amidships on each side to permit side loading and unloading. It is noted that this has been approved for LCT(6) Class.

8. LCM(3)s.

(a) Remarks. Almost without exception this type, both hull and machinery, has stood up exceedingly well.

(b) Recommendations: None.

9. LCVPs

(a) Remarks.

(1) Compared to previous types, the standardization accomplished in the production of LCVPs is most satisfactory.

(2) When loaded this type is slightly down by the bow which is objectionable.

(3) Damages to rudders and steering gear were the main sources of trouble. In retracting, the rudder tends to "take charge" and does not remain amidships. On hitting obstructions, the rudder is bent and the rudder stock twisted. Craft so damaged must be hoisted in and require from 3 to 4 hours to effect repairs.

(4) Brass lifting pads carried away in four (4) different instances.

(5) Cleats are too small and are not properly secured to hull.

(6) In relatively smooth water additional LCVPs can be carried at the rail of APAs, XAPs and AKAs supported by ship's booms, thus increasing the number of assault troops taking part in the assault waves. The standard sling with a ring for craft lowered by booms proved more satisfactory than the special Christ-Craft sling with curved bar. When suspended, LCVPs are bow heavy, and the bar sling tends to slip on the hook.

(b) Recommendations:

(1) Reduce or eliminate down-by-the-bow trim.

(2) Improve design of rudder and skeg to reduce time required to remove and repair.

(3) Substitute cast steel for brass in the manufacture of lifting pads and fittings.

(4) Increase size of cleats on Chris-Craft and provide reinforcement in way of cleats on all LCVPs.

(5) Provide standard ring-type slings for all boats and discard the Chris-Craft curved bar-type sling.

10. LCS(S).

(a) Remarks. Support craft have been and are the subject of considerable correspondence prior and subsequent to this operation. From a material viewpoint, those taking part in the invasion of Sicily stood up well and the principal objection raised was due to their being powered by gasoline engines.

(b) Recommendations pertinent to this type are being prepared and will be forwarded under separate cover, particularly in view of receipt of letter on this subject from the Vice Chief of Naval Operations under date of 1 October, 1943, serial 0449423.

Section V — SALVAGE and FIREFIGHTING

1. Four (4) ATs, one (1) ARS, two (2) medium size YTs and several 65 ton YTs were assigned to Task Force Commanders for salvage and fire fighting.

2. Except for the U.S.S. BETELGEUSE (AKA11) which was towed from Licata to Algiers by one AT, all tugs and salvage ships were available at all times in the assault areas. However, due to beach gradients, none of these was able to close burning and damaged ships and craft on the beaches. Under such conditions the importance of light draft tugs and salvage vessels fitted with proper fire fighting equipment cannot be overemphasized.

3. In joint operations such as this, adaptors should be provided to permit interchange of hose, nozzles and other similar items of fire fighting equipment. This procedure is now common

practice on fueling tankers and at shore fueling stations in the Mediterranean insofar as fueling gear is concerned.

4. LCI(L)s served admirably as tugs to salvage craft of their own type and smaller. Immediately after an assault, I recommended that LCI(L)s in such number as the operation warrants be assigned for salvage work. Craft to be so designated should be equipped with necessary towing and salvage gear.

5. One (1) LCM(3) of each APA, XAP and AKA was designated as a salvage boat. However, these were not properly equipped and, while much valuable work was accomplished, improvement is required in outfitting and in assignment of experienced personnel. Salvage of many shipborne landing craft was delayed or made impossible due to rapid filling of craft with water and sand. Each LCM(3) should be equipped with a portable diesel powered pump to free craft of water and sand immediately. A bulldozer is also requisite and should be fitted with a pump.

6. Reports indicated that in spite of frequent dissemination of information relative to proper dispersion and stowage of fire fighting equipment, and proper loading of inflammable and hazardous materials, irregularities occur. I recommend that a graduate of one of the fire fighting schools be attached to each APA, AKA, XAP, and to the staff of each landing ship and craft Flotilla Commander, and that his sole duty be that of fire prevention and proper loading of ships and craft under his cognizance to insure compliance with current directions.

7. The loading of merchant ships scheduled to arrive in assault or follow-up convoys is a matter of Army responsibility. However, the safety of these ships enroute and while unloading off assault beaches is the responsibility of the Naval Commander. The practice of loading ammunition and gasoline in the same hold is not necessary and presents obvious danger. Steps are being taken to prevent such practice in the Mediterranean. Further action has been initiated to assign coasters or other small ships as packaged gasoline carriers, thus minimizing the danger to large merchant ships.

Section VI — UNLOADING of SHIPS and CRAFT

1. Due to beach gradients and bars, LSTs with few exceptions, were unable to unload directly on to beaches. Ten (10) LSTs were fitted to side-carry pontoon causeways (1 — 175 foot section on each side). In addition, six (6) pontoon causeways were towed to the assault beaches by ATs which then stood by for salvage. In spite of the rough weather encountered, all pontoons carried by LSTs arrived in good condition and without incident. This method is far superior to the towing method and tugs are thus released for towing or salvage operations.

2. The bulwark on each side of each LCT(5) was cut out providing a portable section. This permitted side loading of LCT(5)s from LSTs and also expedited the unloading of LCT(5)s, either into DUKWs or by hand passing to trucks on the beach.

3. Each LST carrying pontoon causeways was provided with one (1) DUKW. This is essential and will be recommended by despatch as an addition to the allowance list of LSTs designated and fitted as pontoon causeway carriers. The "crew" of the DUKW must be Navy personnel. "Seamen, not truck drivers" are required for this work.

4. The majority of DUKWs were loaded in LSTs and LCT(5)s. After making one trip from the ships to the dumps ashore, DUKWs were retained by the Army and in general did not carry out their function during the unloading of assault shipping.

5. Neither the DUKW nor the LCVP is of great value in unloading ships when LCI(L)s, LCT(5)s, and LCM(3)s are available in sufficient numbers. Where these types are not available in sufficient numbers, DUKWs must not be diverted from their prescribed duties.

6. Thirty-two (32) Merchant (Liberty) Ships in the follow-up convoys carried LCM(3)s (complete with spare parts, diesel fuel oil and lubricating oil) manned by Navy personnel. In addition one (1) Officer-in-Charge and one (1) MoMM was assigned to each ship. Upon completion of unloading the ship to which assigned, personnel with their craft reported to the Beach Master for further temporary duty to assist in the unloading of subsequent convoys.

PART VI

MEDICAL

Section I — GENERAL

1. The Medical Annex of the HUSKY plan was based upon the primary functions of the Naval Medical Department in the operation. These consisted of, first, the providing of medical and surgical care of all personnel involved in the operation from the time they embarked until they landed on the invasion beaches and, second, the evacuation of the sick and wounded from the beaches during the assault phase and until adequate medical facilities were established ashore.

2. The medical departments of all ships assumed the responsibility for the treatment of the sick of all personnel of all services enroute to the invasion beaches. In the larger ships separate sick calls were held for Army and Navy personnel, and Army Medical Officers were invited to assist for the purpose of making required Army records. The medical personnel of both services cooperated in a most satisfactory manner for the best interests of all concerned. Boat crews of small landing craft were indoctrinated in first aid procedures and satisfactorily cared for personnel injured on trips between the ships and the beaches.

3. The evacuation organization was made up of the following units:

1. Medical Sections of the Navy Beach Battalions
2. Ambulance Boats
3. Evacuation Ships
4. Hospital facilities on friendly shores.

Section II — BEACH BATTALIONS

1. The medical sections of the Navy Beach Battalion functioned in a satisfactory manner. Casualties were evacuated from the beaches as expeditiously as planned and as could be expected under the existing circumstances but, because of their small number, the medical personnel were not called upon for as much activity as they had been trained to expect. This should not be allowed to modify in any way the recognition of their value and necessity in future operations. Casualty evacuation was handled satisfactorily. Identifying data on Army wounded and the ships to which they were evacuated were furnished Army commands promptly. There were no reports of Army casualties being carried as missing on Army rolls due to a lack of information concerning their evacuation.

2. The duties of Navy Beach Battalions, including the Medical Sections, are difficult because the personnel must land in the earliest stages of the assault and operate in the initial period of over-lapping Army and Navy jurisdictions. There was a lack of understanding on the part of the Army and Navy Medical Sections about the limits of their responsibilities, both in the treatment of casualties on the beaches and their evacuation seaward. The latter is purely a Navy responsibility and is under the control of the Beachmaster whose duty it is to decide when, where and how casualties shall be evacuated seaward. These responsibilities are clearly defined in Standing Operating Procedure, Amphibious Force, U. S. Atlantic Fleet which has been placed in effect throughout this force. The difficulties which arose are considered to have been due to insufficient understanding of these instructions, particularly by Army Medical Personnel. There was much dissatisfaction expressed by the personnel of Navy Medical sections over lack of duties to be performed as the fighting moved inland and the Army began establishing hospital facilities ashore.

Ambulance Boats.

3. Beachmasters were instructed to make use of all landing craft for the evacuation of wounded on the return trips. Patients were taken aboard at the beaches after having received satisfactory first aid ashore and were transported expeditiously to the evacuation ships. Here they were taken aboard either by litter hoists or by hoisting the boat to the rail and removing the patients. The latter was found impractical in a few instances to the delay entailed in moving urgently needed troops and supplies ashore, and occasionally in boats not rigged for the boom. Some of the boats returning with stretcher casualties had carelessly allowed stretchers to be stowed on the slings, resulting in delay in recovering the slings for hoisting the boats. Some ships made use of disabled boats for hoisting patients aboard. Boat returning with patients came alongside the disabled boats, transferred their patients and the disabled boats were then hoisted to the rail.

Section III — EVACUATION SHIPS

Transports.

1. The Transports (APA's and AKA's) remained in the area D, D plus 1, and D plus 2 days during which time they received casualties from the DIME and CENT beaches. All types of casualties were taken aboard and treated in an efficient and business-like manner that entirely justified the increased medical personnel and equipment aboard. They were not over-burdened because casualties were much lighter than expected, but this does not detract from the excellent work they performed, since it is believed they could have handled capacity loads had the necessity been present. These ships are large valuable troop carriers and once their troops and equipment are unloaded, they should leave the area as quickly as possible to avoid unnecessary exposure to enemy action. They are capable of caring for large numbers of all types of battle casualties only while discharging troops and equipment. They must be supplemented by other means of evacuation after their departure, if such is needed.

Landing Ship Tank (LST's).

2. These ships furnished the principal troop lift in the JOSS area. Since no transports were available, they had to be accepted for casualty evacuation. Each ship has a small compact sick bay suitable only for routine sick call and minor surgery, or an occasional job of emergency major surgery. Regularly assigned medical complement is one pharmacist's mate 1st class, with a medical officer in each division of 4 to 6 ships. To bolster these facilities a medical personnel pool of 100 officers and 400 enlisted men was established at the embarkation port (Bizerta). It consisted of 52 Naval Medical officers and 250 hospital corpsmen, the remaining officers and enlisted men being detailed for the duty by the Army. Each outgoing combat-loaded LST carried a medical complement of 1 officer and 5 enlisted men, including the regularly attached pharmacist's mate. Not only were the LST's assigned to the JOSS area so provided, but those assigned to the DIME and CENT areas as well. Seventy-two LST's were thus provided for and the remaining personnel in the pool was kept in reserve for use as needed. A medical supplies dump was established in connection with the personnel pool in order that a constant flow of evacuation supplies to the beaches could be maintained. These supplies were furnished by the medical storehouses of the Mediterranean Base Section, U. S. Army.

3. The Army was not entirely pleased with the prospect of evacuating casualties in LST's, so a compromise was agreed to, whereby casualties were classified before evacuation into evacuable, who could be safely transported from the beaches to the Tunis-Bizerta area, and non-evacuables. The latter were those requiring major surgery during the expected period of transit. These were to be held over for evacuation by a transport in the DIME or CENT areas or by a hospital ship which could be called in if necessary. Fortunately, there were no non-evacuables in the JOSS area during the early days of the operation.

4. The ships were provided with sufficient cots for approximately 150 patients each. After troops and equipment had been unloaded, the tank deck was made ready for the reception of casualties. Army cots were set up and as patients came aboard over the ramp they were placed in them and given such care and assistance as was indicated. The largest number evacuated in one ship was 118, and it was found that 4 enlisted men and one officer were sufficient for their care. Many of the ships received fewer than 12 patients, some never received any. From the experiences gained it is felt that LST's are quite suitable as evacuation ships under the conditions met in the Sicilian campaign, namely, short haul patient lifts limited to sick and lightly wounded and relatively few patients.

5. It was planned to install standee bunks in the after part of the tank deck in a certain number of these ships for casualties, thus eliminating the need for cots. The necessary materials were not made available before the operation and no opportunity was offered to observe their use. Troop bunks may be used, if desired, for casualties.

6. Recommendations.

- (a) Install standee bunks for 150 patients per ship.
- (b) Plan a medical complement of 1 officer and 4 enlisted men when these ships are to be used to transport wounded.
- (c) Limit their patient lifts to lightly wounded and sick who will not require major surgery or unusual medical treatment while in transit.

(d) Medical personnel should be well trained in the giving of plasma, the application and adjustment of splints and bandages, treatment of burns and general nursing care.

Landing Craft, Infantry (LCI's).

7. It was planned to use these ships, if necessary, for the evacuation of ambulatory wounded and sick. It was not necessary to use them, hence no opinion can be given as to their usefulness as evacuation ships.

Hospital Ships and Hospital Carriers.

8. There were about 15 of these ships available in the Mediterranean for use in the operation. Two were U. S. Army hospital ships and the remainder British and Canadian. The plan for their operational control by higher echelons proved too complicated for efficiency and a certain amount of confusion resulted. They had to be used for the evacuation of casualties after the transports left the area, and the effects of the lack of a simple plan for their control became evident. Too much time was required to transmit the requests for their services and the Army hospitals in Sicily became overcrowded awaiting their appearance. They failed to arrive in the proper places at the proper times or they arrived in areas where they were not needed and where they endangered other ships and installations by silhouetting them at night with their lights.

9. Recommendations:

(a) Place all hospital ships and carriers available for an operation in a pool and provide for a direct simple routing of requests for their services from the requesting authority to those exercising operational control over them.

(b) Plan their arrival in the area for sunrise. Have them leave the area at sunset to return the following sunrise, if necessary to complete loading.

(c) Concentrate them at a point close enough to the area so that they may be sent into the area with the least possible delay.

Section IV — HOSPITAL FACILITIES

1. The transports evacuated wounded to Oran; LST's and hospital ships and carriers to Tunis-Bizerta. Each ship prepared a list of wounded aboard, giving name, rank or rate, service number, organization, date wounded, received aboard and transferred, and condition upon transfer. Copies of these reports were furnished the Senior Army and Navy officer present in the port to which evacuated. There were no "lost" cases reported. Army patients were evacuated to Army hospitals. Navy patients were sorted and those that could be treated in Naval Dispensaries were taken there, the remainder transferred to Army hospitals.

2. One group of Transports was destined to sail to the United States. Their patients were divided into two groups: those whose hospital expectancy was less than 90 days and those who were not believed to be able to stand the voyage were transferred ashore; those whose hospital expectancy was more than 90 days and those attached to Army or Navy units temporarily assigned to the theatre for the operation were kept aboard for return to the United States.

Section V — U. S. NAVY CASUALTIES

1. Casualties among the U. S. Naval Personnel participating in the Sicilian campaign between July 10th and August 17th, 1943 are listed below:

Killed in action, died of wound	81
Missing in action	239
Wounded in action	478

2. These figures are based upon reports available at this time and are subject to modification as delayed reports continue to arrive from smaller ships and Army hospitals. The U. S. S. MAD-DOX reported 209 missing in action. The circumstances surrounding the destruction of this ship in combat are such that there is a very strong probability that these were killed in action. Personnel reported as wounded in action are those receiving injuries incident to actual combat. Injuries due to operational and other non-combat causes outside the combat area and medical conditions such as war neurosis, combat fatigue are not included.

PART VII
COMMUNICATIONS

Section I — GENERAL

1. Communications during operation HUSKY were reasonably satisfactory. They were a distinct improvement over communications in operation TORCH. The improvement was chiefly due to:

- (1) Previous experience and training of some ships, military and naval commands in amphibious operations.
- (2) Designation and improvisation of "headquarters" ships for Navy and Army attack force and task group commanders, and installation therein of essential radio equipment.
- (3) Procurement of an adequate number of naval communication personnel, officers and enlisted men, and the setting up adequate communication staffs for Navy and Army commanders afloat and ashore.
- (4) Successful operation of principal Army command circuits from "headquarters" ships, which prevented acute overloading of Navy channels with Army traffic.
- (5) Planning of the operation in close association with the Naval Commander-in-Chief (CinCMed) and the Army Task Force Commander (C.G. 7th Army).

In addition the following factors contributed to improved communications:

- (6) Provision of a U. S. Navy communication liaison unit to the Commander-in-Chief, Mediterranean at the assault headquarters and communication center, Malta.
- (7) Provision of Royal Navy nucleus cryptographic teams to U. S. Navy task force commanders.
- (8) Retention of ECM's on board the majority of U. S. vessels normally allowed this equipment.
- (9) Training of special coding boards to handle British cryptographic systems for task force commanders.

2. Communication preparations for the operation were handicapped by the distance of the headquarters of this theater from the Navy Department, and the difficulty of obtaining required personnel and material before the demands could be justified on the basis of definite operation plans. Many equipment deficiencies ashore and afloat were met by borrowing from Army and, to some extent, from the Royal Navy. The personnel problem was acute until the embarkation period, when the arrival of a large number of naval district communication personnel alleviated the shortage in numbers. However, this personnel generally had no sea-going or operational experience, and lacked any knowledge of amphibious and British communications.

3. Further difficulties during the pre-assault stage were:

- (1) The concurrent creation of a shore communication organization, with inadequate personnel and materiel, to meet the rapidly expanding (and changing) training and operational demands.
- (2) The lack of previously established amphibious training activities.
- (3) A continually increasing load of administrative and operational despatch traffic which threatened to swamp all radio and wire facilities just before the operation.

Section II — PLANNING

1. Many communication matters which are accepted as elementary in naval communications, become complicated in joint operations, and in major combined operations — in which six services are operating under coordinate ground, sea, and air commands, as is the case in the Mediterranean area — some of the elements of communications become exceedingly complex. Certain items at point are: procedures, call signs, cryptographic aids, frequencies.

2. Communication planning for HUSKY had in particular to provide for command by the Royal Navy Commander in Chief, coordination with British task forces, command of British vessels in the Western Naval Task Force, coordination with the U. S. Army and Royal Air Forces operating as a combined Air Force, coordination with the U. S. Army ground forces in the West-

ern Task Force, and for the simultaneous execution of one "ship-shore" assault, one "shore-to-shore" assault, and one "mixed" assault.

3. The "ship-shore" assault employs combat-loaded transports organized by divisions. Troops are landed in ship's boats, similarly organized to support the landing attack plan. This form of assault has application in an overseas movement and the technique has been fully developed through training and combat experience. The "shore-to-shore" assault employs landing ships and craft and has application where scene of the assault is not far distant from mounting or staging ports. In the "mixed" assault, part of the assault troops were embarked in transports, part in landing craft.

4. Ship-shore assault communication doctrine has become fairly well standardized. The use of landing ships and craft in a full scale "shore-to-shore" assault was an operation much discussed, but previously untried. A "shore-to-shore" communication doctrine was promulgated, which, with modifications, was used in the shore-to-shore assault. The inexperience of landing craft communication personnel required that circuits and equipment be kept as simple as practicable.

5. Other difficulties encountered in planning were:-

- (1) The absence of one attack force commander (CTF 85).
- (2) The uncertainty as to the communication and fighter director facilities which could be definitely provided afloat, prior to embarkation of Navy, Army, and Air commands.
- (3) A change in the locale of the assault and the late settling of the details of the operation plan.
- (4) Progressive changes and increases in the Air Force requirements.
- (5) Concurrent organization and expansion of area communications, previously mentioned.

6. Owing to the large number of small ships and craft involved and the comparatively inexperienced personnel therein, to the late arrival of the transports and combatant ships and their unfamiliarity with communications in the Mediterranean, to the necessity for making plans intelligible to other services, and to the specialized nature of amphibious operations, the communication plan was drafted in full with complete appendices on every pertinent subject. The result was a formidable-looking document but reports indicate that communication officers of small ships were able to assimilate the pertinent portions with minimum difficulty and confusion.

7. The communication plan was prepared as rapidly as possible, but owing to late completion of operational details, the plan reached the attack force commanders at a late date. However, attack force commanders were kept advised of planning developments by conference and by advance copies of appendices. The detailed nature of the plan permitted attack force commanders to go into the operation with a minimum of additional instructions.

8. On Royal Navy and one U. S. Army signal liaison officer, assigned to the staff of the Naval Commander Western Task Force, were of invaluable assistance in the preparation of the plan. The similar assignment of an Air Force signal officer, had it been practicable, would have been of material assistance in anticipating the needs of the Air Force.

Section III — COVER PLAN

1. In implementation of the cover plan which indicated the mounting of two independent assaults, one in the Oran area, the other in the Bizerta area, an endeavor was made to break the communication link at Algiers. Messages handled by radio between Oran and Algiers were, insofar as practicable, transmitted by teletype between Algiers and Bizerta, and vice versa. Owing to the unreliability of teleprinter service at the time, and to the traffic overload, it was not always possible to carry out this scheme perfectly. Practically all traffic was handled point to point. Flagships were served by direct teleprinter lines to base radio stations. The reported movement of enemy aircraft to Sardinia prior to the operation indicates that the cover plan may have had effect.

Section IV — "HEADQUARTERS" SHIPS

1. There was but one specifically designed "headquarters" ship in the Western Naval Task Force. This was the ANCON, the flagship of Commander Task Force 85 who commanded the CENT assault. Other vessels used as "headquarters" ships, were wholly or partially outfitted in this theater. The fact that the ANCON was any better fitted than other transport flagship was

not known by NCWTF until the preliminary plans for the operation were definitely settled.

2. The MONROVIA, flagship of Naval Commander Western Task Force, had had some inadequate modifications made prior to arrival in North Africa. Further essential modifications were undertaken alongside the tender in the only time available, a period of ten days. The joint operations room was enlarged, a joint communication office and three code rooms were provided, the radio rooms were enlarged, the radio installation was considerably increased and rearranged to separate receivers and transmitters, the SG radar was moved from its position completely blocking the center of the signal bridge, and the signal bridge was approximately doubled in size and facilities. An air operations office was constructed, after embarkation.

3. The headquarters arrangements in the SAMUEL CHASE, flagship of Commander Task Force 81 who commanded the DIME assault, were completely improvised in the theater. The joint operations, communications, and coding spaces were provided and all extra radio equipment was installed alongside the tender.

4. The BISCAYNE, flagship of Commander Task Force 86 who commanded the JOSS assault, was similarly modified in the theater. This small vessel was chosen for the flagship of the shore-to-shore (landing craft) assault because of the undesirability of exposing a single large transport to probable bombing and loss owing to its outstanding target characteristics among a group of landing craft. It was expected that the BISCAYNE would appear to be just another escort vessel. The small size of the ship limited the facilities which it was practicable to provide. An SG radar was installed under conditions of great pressure, just prior to the assault.

5. The ORIZABA was used as "headquarters" ship for the KOOL (Floating Reserve) group. Its equipment and personnel were provided in the United States on a last-minute request by the Army.

6. Landing Craft "headquarters" vessels were improvised in LCI(L). Additional radio equipment and personnel were provided. These craft were called Regimental Combat Team "headquarters" ships, as they corresponded to Transport Division flagships in a ship-shore assault. However, the Navy's needs for command craft are primary; the provision for a regimental commander should be considered a secondary factor.

7. Additional radio equipment was also provided in the transports carrying transport group and unit commanders and Army regimental combat team commanders, and in flotilla and group LST and LCI(L) flagships.

8. None of the improvised "headquarters" ships was wholly satisfactory in the operation. The BISCAYNE, which was found to be well suited to its particular assignment, requires complete conversion and additional ventilation for satisfactory service. The LCI(L)'s performed their communication missions but were unsatisfactory from a navigational and flagship point of view. The specially equipped combat-loaders were in no way satisfactory. The characteristics of a "headquarters" ship and a combat-loader can not be incorporated in the same vessel. Time and equipment available did not permit provision of more extensive facilities, nor were alterations permanently affecting the characteristics of the vessels authorized. The chief deficiencies were inadequate and insufficient communication equipment and fighter direction facilities, mutual interference, inadequate working space for the required Navy, Army and Air staff personnel, insufficient radio channels for Army and Air Force requirements, and poor working conditions. However, inadequate as were the ships, it is considered that the operation could not have succeeded without them. Owing to the late arrival of equipment from the U. S., much of the additional radio equipment installed was obtained on loan from the Army.

Section V — DEFICIENCIES

1. While communications generally met the demands of the operation, certain deficiencies which have been reported were

- (1) Breaking of radio silence (on TBS) prior H hour (in CENT force).
- (2) Overloading of TBS circuit (in CENT and DIME forces).
- (3) Poor security and discipline and misuse of voice circuits — (general).
- (4) Interference on many channels — (general).
- (5) Insufficient number of shore fire control channels — (in CENT force).
- (6) Failure of fire control channels — (in JOSS force).

- (7) Failure of VHF communications with planes — (equipment casualties in certain "headquarters" ships).
- (8) Non-use of "Radar Reporting Wave".
- (9) Mutual interference on "headquarters" ships.
- (10) Insufficient radio channels for Army and Air Force.
- (11) Overloading of Task Force Commander's circuit.

Radio Silence

2. Strictest radio silence had been ordered from 1600 D-1 day until H hour. However, radio silence was broken on the TBS by the CENT forces on arrival in the transport area. Owing to the delay in unloading of this Force, the CENT commander desired to delay H hour and utilized the TBS in this connection. The continued transmissions and the pertinent information broadcast might well have eliminated all element of surprise. If the enemy thus received warning of the attack, no counteraction was noted.

TBS and other Voice Circuits

3. The TBS was intended to be used as a tactical and local warning circuit. Attack force commanders were provided with individual voice channels for use within their own forces. However, the CENT and DIME forces which were generally equipped with the TBS, utilized this circuit to transmit any and all types of traffic, resulting in the overloading of this channel and preventing its satisfactory utilization by combatant vessels. A common VHF voice channel is required. The proposal that each attack force be provided a separate TBS frequency is not recommended until equipment is installed which will provide two VHF channels and permit instantaneous switching from one channel to the other.

4. Some confusion was reported when orders transmitted by one attack force were heard by vessels of another attack force. Proper attention to calls and procedure would normally obviate this difficulty.

5. Voice circuits were generally subject to misuse. Discipline was poor. Security was poor. Many messages handled in plain language should have been coded and transmitted by key. Coded messages were sometimes unnecessarily transmitted by voice, entailing prolonged blocking of the circuits concerned. These deficiencies can be overcome only by more training of communication personnel and by better indoctrination of the senior officers who in many cases are utilizing or controlling the voice channels.

Frequencies — Interference and Allocation

6. Interference was experienced on many channels, from foreign stations and from own or associated forces. All radio frequencies were allocated by the Commander-in-Chief, Allied Forces. Demands for frequencies in the usable spectrum far exceeded the number of available channels. Many low power channels had to be shared. The large naval, and ground forces operating within a comparatively small area, and the lower standards of frequency stability prevailing in some services, made the complete avoidance of interference impracticable. However, every effort was made by the Command-in-Chief to so allocate frequencies that undue interference from allied or foreign sources would not be encountered. Owing to the shortage of channels, it was not possible to assign each naval attack force all the frequencies desired by its commander.

Fire Control Channels

7. Shore fire control channels are reported to have operated successfully except in the JOSS assault. It is believed that the failures in this area were due to loss of equipment by shore fire control parties or separation of shore fire control parties and the landing force unit commanders. No information on this subject has been received from the Army.

VHF Communication with Planes.

8. Owing to the non-receipt of VHF equipment from the United States, and in accordance with the desires of the Air Force, SCR 522 (aircraft) equipment was installed in the BISCAYNE and SAMUEL CHASE for fighter direction communications. Two sets were also provided in the MONROVIA in addition to the previously installed BC 639/640 equipments. The SCR 522 equipment proved unsatisfactory, owing to lack of ruggedness of its motor generator and to low power and frequency instability. The BISCAYNE did not establish communications with planes. The

SAMUEL CHASE could communicate only with planes directly overhead. The burning out of motor generators in the MONROVIA limited this ship to the two channels provided by the regularly installed BC 639/640 equipments. However, all fighter control was successfully handled by the MONROVIA and the ANCON. (The Air Force had previously decided not to utilize the fighter direction facilities of the LEONARD WOOD).

Radar Reporting Circuit

9. All radar information for fighter control was in general obtained from the "headquarters" ship's own radar. Radar guard ships had been directed to report plots over the radar reporting wave. Very few plots were so received. This situation was corrected for later operations by further training and emphasis on radar plotting.

Mutual interference and shortage of radio channels on "headquarters" ships.

10. Considerable mutual interference was experienced on the improvised "headquarters" ships. Owing to the space and antenna limitations of the ships, the hasty installations, and the lack of alternate Army, Navy, and Air Force frequencies, some interference was to be expected. It was found that the low power TCS equipments were generally the worst offenders. Mutual interference conditions can be improved by the provision of specially designed "headquarters" ships.

11. Owing to the limited amount of equipment available in the improvised "headquarters" ships, the number of radio channels made available to the Army and Air Force was less than the number desired by those services. These services have stated that the resultant situation was not satisfactory and that the Navy should arrange to provide more channels in future operations.

Overloading of Task Force Commander's circuit.

12. Commander Task Force 85 reports that the task force commander's circuit was overloaded and recommends that additional circuits of this type be provided in future operations.

13. Provision was made for a secondary Task Force Commander's circuit which was occasionally used to handle overflow traffic. On the evening of D + 2 day, Commander Task Force 85 reported a large amount of traffic on hand and requested establishment of an overflow circuit. Unfortunately the flagships were then leaving the assault area and radio silence prevented the establishment of the new circuit.

Remedy for reported deficiencies

14. Aside from the materiel troubles mentioned, most of the deficiencies were the result of misuse or non-use of the prescribed communication channels and failure to follow normal communication doctrine. The communication plan is considered to have been sound. The majority of the deficiencies may be ascribed to insufficient training and unfamiliarity with conditions pertaining in an air-amphibious assault. Improved communications in a later operation, hastily planned, and effected against strong enemy resistance, bears out this contention.

Comment on other features of communications during the operation follows.

Section VI — CALL SIGNS

1. The necessity for preparation and use of special U. S. Navy operational call signs is a moot subject. Current U. S. Navy doctrine requires encipherment of normal call signs except under conditions of tactical emergency. This exception envisages the requirements of a naval engagement, normally lasting not more than two or three hours. "Hot" communications during an amphibious operation will normally continue for three days and may continue for two or three weeks. During this period main operational circuits work at full capacity and the traffic handled by "headquarters" ships is exceptionally heavy. The encipherment of calls is unacceptable from the standpoint of speed and if done would probably compromise the cipher. The use of unenciphered U. S. Navy calls presents the enemy with information gratis, and in the case of new calls, eventually compromises them. The same is true of regular combined calls. The preparation of special call lists involves additional labor and paper, but for the reasons given and for convenience in assigning calls to the principal commanders of other services, it appears to be the best solution of an unsatisfactory situation.

2. In combined operations, in which Royal Navy and U. S. Navy vessels are intimately mixed, the only common call list is the combined one. This does not provide for the U. S. system of task fleet, force, group, and unit numbers. Temporary calls may be assigned by the Royal Navy senior officer, but this also involves extensive paper work. Special U. S. Navy operational call lists can be provided the Royal Navy ships and commands requiring them without additional labor in preparation.

3. As the time required for preparation and distribution of special call lists to miscellaneous forces disposed throughout a wide area is sometimes a critical factor, it is suggested that, until some more satisfactory solution is arrived at, special call lists in blank be prepared in the Navy Department and issued in required numbers to commanders conducting amphibious operations. However, as the tendency in this theater is to allocate mixed British-U. S. forces to an assault on very short notice, a combined naval call system is required which can be previously distributed and held by all commands likely to be involved in an operation, which is designed to meet the needs of an amphibious assault (and follow up), and which is mutually satisfactory to U. S. and British naval authorities.

4. As ground force and air force call signs are also employed in "headquarters" ships circuits, the naval call signs should, if practicable, be of a distinctive form. The wide variety of forms of call signs employed in this theater makes some understanding with the other services on this score desirable.

Section VII — AUTHENTICATION

1. As CCBP O122 was not acceptable to all services concerned, no combined system of authentication was prescribed for operation HUSKY. As only an advance copy of O122 was then available, a somewhat similar authentication system previously prepared by Commander U. S. Naval Forces, Northwest African Waters and acceptable to the Seventh Army, was adapted for joint use in the Western Task Force, (the American portion of HUSKY).

2. Enemy attempts at deception in this instance, were not numerous and, for the most part, were clumsy and transparent. Authentication was therefore seldom required or used. The Royal Navy in this area does not believe an authentication system necessary or desirable. However, NCWTF is of the opinion that an authentication system should always be available, for use when the need develops. If employed as a matter of routine, any system practicable of use during an amphibious operation will have little or no security. In the few instances when enemy deception is serious, an authenticator is highly desirable and a system such as prescribed for HUSKY should have the necessary security.

2. C. O. SAVANNAH, with reference to later leap-frog landings along the north coast of Sicily, states that an authenticator should be provided for use on shore fire control circuits. Authenticator sheets were prescribed for HUSKY only until D + 10 day. However, these tables could well have been used at later dates by local arrangements with the Seventh Army.

Section VIII — CRYPTOGRAPHIC AIDS

1. Reduced allowances of U. S. cryptographic aids, (generally eliminating world wide systems), were prescribed for HUSKY. Further reduction was ordered for vessels operating in specially hazardous waters. Landing ships and craft held few cryptographic systems. However, ECM's were retained on board all ships normally holding this device, except those assigned specially hazardous duties. This materially expedited encryption and decryption of Western Naval Task Force traffic. The provision of a communication liaison team, also equipped with ECM's, to the Commander-in-Chief, Mediterranean materially expedited high command traffic and collective address messages affecting only the Western Naval Task Force, which would otherwise have been encrypted in combined or British systems.

2. Special British systems were prescribed for combined (Royal Navy-U. S. Navy) use by Commander-in-Chief, Mediterranean. The distribution problem, as was the case in TORCH, involved both sides of the Atlantic, the Admiralty and the Navy Department. Distribution to all vessels concerned prior to sailing was correspondingly troublesome. This problem will continue to be troublesome until appropriate combined publications are approved, distributed, and made available for special operations.

3. U. S. coding boards continued to experience difficulty with British type codes and "cyphers". U. S. operators continued to garble number code transmissions. However, there is nothing inherently wrong with British-U. S. systems. They are admittedly slower than the ECM. (A sampling on board NCWTF flagship showed an average of 46 groups per man per hour). Considerable experience is required to use these cryptographic systems effectively. Unless continuously operating in a British area, ships with small communication departments generally have not mastered the present combined systems, and it is doubtful if they ever will.

4. While the joint systems prescribed for the U. S. Army and Navy more or less meet the needs, the U. S. Army requires special systems for working with the British Army; the Royal Navy, special systems for use with the British Army and Royal Air Force. As such systems are generally provided by liaison personnel, six distinct coding units will usually be found on board a high command "headquarters" ship in this theater.

5. While the situation was greatly improved over that existing in TORCH, occasional delay was entailed in flag ships by necessary encipherment of messages in two systems, or by the re-encipherment of an incoming message in a second system in order to pass it to new action or information addressees. This practice is highly undesirable from a security point of view. When encipherment involves the question of transmission security versus physical security, there is no ready answer.

6. The views of Commander U. S. Naval Forces, Northwest African Waters on basic combined cryptographic channels normally required for combined operations in this theater were communicated to the Commander-in-Chief, Mediterranean and to the Combined Security Board. These channels are briefly

(a) A high security system for Navy flag officers, general officers commanding Army corps and task forces, and Air officers of the same echelon.

(b) A system of good security distributed down to class 3 ships (U.S.) and major war vessels (R.N.), Army division commanders or senior officers in the assault (if of a lower echelon), and U. S. Army Air Force Group (R. A. F. Wing) commands.

(c) A low grade system for general distribution, prepared in several editions.

7. The CCM when distributed appears to be the logical system for channel (a), and possibly (b). The British "Fleet Code" has been redrafted locally by representatives of the Armies, Navies and Air Forces of the U. S. and Great Britain, and is being submitted to the Combined Communication Board as a suggested low grade system for channel (c).

Section IX — VOICE CODES

1. Probably the bulk of traffic on landing craft, amphibious, and lower command channels was transmitted in plain language over voice radio circuits. While this is satisfactory with the majority of messages so handled during the assault proper, many voice messages require temporary security, particularly following the initial landing.

2. A special voice code was prepared and promulgated for U. S. Naval use in HUSKY. In view of the number of voice channels used in landing operations, a code of some sort is essential. However, if sufficient code words are provided to give a fair degree of security, the code is too awkward and slow for practical assault purposes. The usual short code, most convenient to use has little security. The NWTF code was stated to be too long and awkward by some users. The satisfactory solution to reasonable security (when required) on voice circuits is not clear. The most promising partial solution appears to be the Codex device, adapted by the British Army from the Germans, and by the U. S. Army in this theater from the British Army. A limited number of these devices was obtained from the Army for such use as might be feasible. As it was found impracticable to obtain other than the Army (military) vocabulary, the Codex was actually little used by the naval forces in HUSKY.

3. Whatever voice code may be devised, "security minded" personnel are required to make the code effective. Generally the security violations occur, not from lack of suitable cryptographic systems, but from lack of thought or intent on the part of the talker concerned. In this feature the U. S. Navy in general needs much training.

Section X — SPECIAL CODES

A combined Air Warning Code, Fighter Director Vocabulary, and Mediterranean Area

Fighter Operations Grid (MAFOG) were prescribed by higher authority for appropriate use in connection with aircraft. These specialized codes appeared to be adequate for their designed purpose. Fighter direction personnel used all three publications as one document and actually committed much of it to memory.

Section XI — RADIO CHANNELS

1. With the exception of the shore fire control circuits in the JOSS area, amphibious radio channels were generally satisfactory. There was a tendency to use voice, even when key was prescribed, if the equipment permitted. While voice circuits have a definite useful function in air-amphibious operations, voice communications can be overdone. The tendency to use voice is increased by the large proportion of radiomen, inexperienced in tactical key circuit operation, and of communication officers inexperienced in tactical communications, now found in the war-time navy. This is particularly true of landing ships and craft. Further training will be remedial.

2. Paralleling a British "Shore Bombardment Wave," a "Common Fire Support Calling" circuit was provided for HUSKY. There is little comment on this circuit in the reports of subordinate commanders. Operations following the assault have proven the desirability of this channel. Commander Cruiser Division EIGHT has developed this shore fire control communication system so that one common calling channel and six shore fire control channels provide desired flexibility and meet the normal needs of an assault in division strength.

3. Owing to the satisfactory operation of the usual command channels and to the ability to broadcast messages in U. S. procedure and cryptographic systems over the Malta "Area Broadcast," the WNTF "Force Fox" was not used as much as expected. However, this is a very useful channel in emergencies.

Section XII — VISUAL

1. Visual communications were used to capacity throughout the operation, and the heavy traffic load was, in the main, handled efficiently. "Headquarters" ships reported 120 to 350 visual messages serviced per day. Minor faults noted were in general due to inadequate training, and in the smaller vessels, possibly, to insufficient personnel.

2. As British landing craft, motor torpedo boats, and ships, and both U. S. and British merchantmen were involved in the Western Naval Task Force, visual call signs were something of a problem. Enroute in U. S. ship convoys, station unit designations were used as much as practicable, employing task organization number calls when applicable. International calls were used with British ships; hull numbers were generally used by both British and U. S. landing craft.

3. Landing craft visual communications have been handicapped by lack of a suitable signal book. As LCT's do not carry a full set of flags, any signal system applicable to all landing ships and craft must be simple. LST's and LCI(L)'s are capable of handling general signals and normally hold the auxiliary signal book, which publication is not authorized to be held in landings. Prior to HUSKY the LCT signal pamphlet was revised and the course, speed, and turn pennants were added to the LCT flagbag in the hope that this simple system would be adequate for an assault. However, in the mixed (ship and craft) task force and reserve task group, it was found necessary to employ Mersigs enroute. The shore-to-shore task force utilized an extract from the Auxiliary Signal Book in addition to the LCT(5) signal pamphlet. As the regular publications or extracts therefrom were not permitted to be beached, difficulty arises after the initial landing, when the landing vessels are shifted from one task force to another and the occasion arises to exchange signals with various types and groups of ships.

4. A landing craft signal book is required which may be used by LCT's as well as LST's and LCI(L)'s, which will meet the requirements of landing craft convoy movements as well as assault landings, which will provide the minimum signals necessary to coordinate operations with ships, and which may be lost without seriously compromising the General Signal Book. Lacking such a specialized signal book, it appears desirable that landing craft carry the "Auxiliary Signal Book" and "Mersigs" at all times.

5. British craft used the "Major Landing Craft Signal Pamphlet" which appears to be adequate for their own needs. British ships are now provided with the General Signal Book and extracts from "General Tactical Instructions" for limited tactical cooperation between British and

U. S. forces. It is probable that future operations will find British and U. S. landing craft acting in close tactical cooperation. It appears that a combined landing craft signal pamphlet, which reasonably meets the U. S. requirements set forth in the preceding paragraph, will be essential.

Section XIII — NAN EQUIPMENT

1. Equipment available for this operation consisted of the following units:
 - (a) 8" Signal Searchlight (ship and beach).
 - (b) 32 pt. navigational beacons.
 - (c) 6" portable beach markers.
 - (d) Receivers, type "A."
 - (e) Receivers, type "EMI."
2. The transports of the Amphibious Force, Atlantic Fleet arrived in this theater fully equipped with this apparatus and schooled in its use. The equipment to be installed in vessels based in North Africa did not arrive until a late date, allowing but a limited time for distribution and training. The results attained were roughly proportional to the amount of training received by the operating personnel. Commander Transports, Amphibious Force, Atlantic Fleet reported that, "When unwise to use normal visual channels, NAN proved invaluable, especially during the approach to the transport area and in the transport area before departure of boat groups for their line of departure." CTF 86 reported that visual communication by NAN method was unsatisfactory because signalmen failed to appreciate the amount of motion ships had in the prevailing sea and failed to keep the apparatus pointed at the receiving ship. CTF 81 reported the usefulness of this equipment "as a means of visual communication between vessels in the transport area after dark. Its use in connection with units ashore, especially as markers, was not satisfactory. The IR markers ashore or in the scout boats could not be located."
3. With respect to the specific units of equipment, the following comments appear warranted.
 - (a) The 8" searchlight was of marked value to transports and control vessels during the approach.
 - (b) The navigational beacons were very useful to ships for station keeping and in anchoring in the transport area, and for boat waves in keeping station on the control vessels and on the transports while in the rendezvous area. (Beacons on two beach marking submarines were picked up without difficulty by the COWIE, which had been detailed to this duty).
 - (c) The storage battery powered lights on the beach marking boats are reported to have been too low powered; many of the lights were not observed by the boat waves. The beach markers placed ashore were reported to have about 60% of the range expected from Bureau of Ships tests.
 - (d) The type "A" receiver was found to be superior to the type EMI, but neither receiver is wholly satisfactory. Gunfire flashes and pyrotechnics on shore effectively neutralize the receivers.
5. NAN equipment unquestionably has some value in amphibious operations. With adequate training in the use of the equipment, better results may be expected in future operations.

Section XIV — RADAR and IFF

1. Model SG radar again proved to be of great value in the approach, both to station keeping and to navigation - finding the proper location off the proper beach in the dark. The operation of air search radar and the dissemination of information therefrom was poor.
2. Most guard ships were ill-prepared to perform efficient radar search duty. Radar plots were inadequate; many radar operators appeared to lack indoctrination and training. When designating ships for radar guard duty, some Task Force Commanders and O. T. C.'s failed to give complete and specific instructions; in many cases the watch schedule provided neither standby guard ships nor kept up with the change of events. Slow procedure and delays in making reports over the radar reporting wave rendered it practically useless. Either enemy planes had already attacked or unrecognized allied planes had been fired on before word was received of their presence. There were too many cases of detection reports not being followed up by further track-

ing information. Consequently plotting officers on other ships could have no idea of speed, course and height of the original target, and could not predict who might expect friendly or enemy planes overhead.

3. The IFF situation was such that recognition information was always scanty and sometimes misleading. Many allied planes failed to switch on IFF even when so equipped. The Mark III system was brought into effect so close to "D" day that ships had little time for tuning, testing and indoctrinating personnel in IFF gear. In many cases, instruction books and test equipment were lacking, frequencies and coding position unknown or not understood, and material status either inoperative or unknown.

4. The necessary steps have been taken to correct the deficiencies found in the operation of radar during HUSKY.

Section XV — COUNTERMEASURES

RCM Unit No. 4 was assigned Commander U. S. Naval Forces, Northwest African Waters for the operation. Some investigational work was accomplished but unfortunately its main equipment did not arrive in time for the assault.

Section XVI — RADIO EQUIPMENT

VHF Ship-Plane Equipment

1. The SCR 522 equipment is mentioned in Section V, paragraph 8. While not designed for shipboard installation, and while generally of little use in this operation, the set does have potential value in smaller ships for emergency communication with fighter planes. Properly instructed technicians can keep it on frequency. Its motor generator is adequate for intermittent use.

2. The BC 639/640 has stood up well under all operating conditions to date - including shock of gunfire and near-misses. It has furnished reliable communications for fighter control.

Portable Equipment

3. The TBX was used with success by operators trained and expert in its use. SCR 510 equipment was used by CTF 86 for boat control circuits. No reports of drowning of SCR 510 sets have been received. The water proofing method employed appears to have been wholly successful. When comparatively untrained and inexperienced operators must man portable sets, Army FM equipment has much in its favor.

4. Model TBX equipment continued to give reliable service on the beach. However, its limited frequency range makes frequency allocation in the overcrowded Mediterranean ether, difficult. Requests for a means of transportation were received from beach parties which were required to shift location several times between widely separated beaches.

Mobile equipment

5. Beach battalions have requested one vehicular radio set of increased power (per battalion) for communication between main beaches, and between beaches and off-shore task forces. This request has merit and is concurred in. An SCR 193 mounted in a 1/4 ton 4 x 4 would be satisfactory.

6. Shore fire control parties experienced difficulty in keeping pace with the movements of the assault units, and recommendations have been received that all SFCP radio equipment be vehicle-mounted. This request has merit and is concurred in in principle. However, owing to the need of keeping the number of vehicles in the assault waves to an absolute minimum, it is recommended that but three SFC parties per division be so equipped. This matter comes under the cognizance of the Army.

7. Advanced Base groups have been provided with equipment which, with the exception of the TBW, requires normal shore station facilities to set up. The setting up of such gear entails entirely too much delay in establishing base communications, particularly when a coastal movement is involved. For HUSKY, three TBW's were mounted in vehicles in this theater. These three sets were the chief reliance of the Advanced Base Units (four in number) for nearly one month. During this period communications to and between Sicilian ports remained unsatisfactory. It is recommended that half the radio equipment provided Advance Base groups operating under any similar conditions be vehicular mounted, complete with power supply and antennas. Equipments of the type of the Army SCR 299 are required.

Section XVII — CONCLUSION

1. Considering the conditions under which the U. S. naval forces in this theater simultaneously organized, trained, and planned for a major combined operation, the difficulties encountered in getting communication personnel and materiel into the theater, and in full consideration of all deficiencies set forth, communications in operation HUSKY were better than the more optimistic expectations of NCWTF. The following deficiencies of general application warrant emphasis.

(a) U. S. ships were not satisfactory in the individual and coordinated employment of air search radar under conditions of air assault.

Ships taking part in later operations have shown marked improvement in this respect.

(b) Voice circuits were mis-used, discipline and security were poor.

Voice channels are necessary and most useful, but are dangerous facilities in the hands of personnel not fully indoctrinated in the principles of security.

2. Communications in a full scale air-amphibious combined operation will never be fully up to normal Navy standards. Some of the reasons are:

(a) A new and complicated communication organization is established involving other services, which for reasons of security, is not made known to the majority of personnel concerned until after sailing.

(b) "Headquarters" ship, transports, and landing craft communication staffs are temporarily reorganized, are made up of Army, Navy, and Air Force personnel who may not have seen each other until sailing date.

(c) Wholly new communication circuits have to be established under stress of battle, and in many cases under most unfavorable physical conditions.

(d) The total Army, Navy, and Air Force traffic handled on board ship is tremendous. It is necessary to utilize all available communication personnel, many of them in duties in which they have had little previous experience.

However, amphibious communications can be satisfactory. Training and experience in successive operations has been productive of a steady improvement. It is expected that the general standard of amphibious communications will continue to improve through future operations.

3. Necessary factors in satisfactory air-amphibious combined operations are:

(a) Specifically designed "headquarters" ships for attack (task) force and higher commanders participating in the assault.

Operation HUSKY succeeded with improvised facilities, but a bitterly contested landing, involving prolonged air-amphibious communications in the assault area, will require every known "headquarters" ship facility.

(b) Communication personnel adequate in numbers and training.

The numerous circuits and heavy traffic load during and following the assault require more communication officers and men than are normally allowed. Combined communications require further additional personnel. Key personnel, skilled in air-amphibious and combined communications, are required from the initiation of planning.

(c) Communication materiel available in the theater, adequate to meet reasonable needs as they arise during the vagaries of operational planning.

(d) Planning in close association with the commanders of the other services in the same echelon, and with the commanders of the next higher and lower naval echelons.

(e) Common procedures, call sign systems, and cryptographic aids.

(f) A common landing craft signal book, designed to meet all essential needs of landing ships and craft enroute, in the assault, and during follow-up operations.

4. In the Mediterranean theater, British and U. S. forces have become more intimately mixed in each successive operation. British and Dutch ships operate under U. S. Navy command, U. S. ships under Royal Navy command; British and French troops may be landed in an assault from U. S. Navy ships and craft, supported by Royal Navy and Dutch gunfire and by U. S. Army Air Force and (R.N.) Fleet Air Arm aircraft. A common method and common systems for handling radio, visual (and sound) communications are required. Common procedures have been established. Combined systems of call signs (and delivery groups), combined cryptographic aids, and a combined landing craft signal book - all designed to meet the special needs of amphibious operations - are essential.

5. As the conditions now existing in the Mediterranean will undoubtedly prevail in other theaters, every effort should be made to expedite the provision of a "universal" communication system, available for use "between and within each and every service of the United States and the British Commonwealth, wherever located."

6. Cooperation between all services concerned in the planning and handling of communications for operation HUSKY was par excellence—in spirit and in practice. This spirit of cooperation was continuously evident in the day to day dealings of both officers and enlisted men.

PART VIII

CONCLUSIONS

The Sicilian campaign was unique in many respects but the most impressive fact was the vast scale upon which it was launched. Since future amphibious operations in this conflict may well exceed in proportions this campaign, it is felt that the "lessons learned" should receive close study by those charged with the planning and execution of such offensive efforts. In order that maximum benefit may be derived from the mistakes made and the experience gained, special emphasis is directed to specific items of primary importance recapitulated herewith:

COMMAND:

1. The approved policy of the Joint Chiefs of Staff, governing command functions in amphibious operations, should be widely promulgated to all services.
2. Publications FM 31-5, FTP 155, and FTP 167 should be brought to conformity through elimination of inconsistencies.
3. The term "Headquarters Ship" should be abolished. The naval term "Flagship" should be used in lieu thereof.
4. Early issuance of the directive from the high echelons should be made, setting forth the respective commanders, their authority and responsibility, particularly with relation to other services on the same echelon.

PLANNING:

5. Planners from the staffs of the Naval Commander and the Army Commander should participate in the preliminary planning of the higher echelon staff.
6. The high echelon planning staff should prepare an "Appreciation" or "Estimate of the Situation" from which should be formulated an "Outline Plan."
7. The high echelon Outline Plan must support the Appreciation from which it is derived: the Appreciation must be consistent with the Strategic Concept upon which it is based.
8. When the correct physical objectives have been derived, the Outline Plan should include effective actions with reference thereto.
9. Interruption of enemy commerce by offensive naval movements should supplement the air effort against land communications.
10. Prior to the invasion, propaganda leaflets, radio broadcasts, and other forms of psychological warfare should be fully employed in softening the fiber of the enemy.
11. When the locale of operations permits, the plan should provide for the early capture and exploitation of an enemy port.
12. The logistic requirements of all military forces should be computed in detail and weighed against the capacity of the beaches selected for maintenance.
13. Where extended beach maintenance is imposed by the absence of suitable ports, the plan should provide for greatly augmented Shore Parties or Beach Groups.
14. Where the assault beaches lack suitable exits, the plan should provide for greatly augmented Road Construction and Transportation units.
15. An advance base, capable of mounting troops, vehicles, and logistic supply is essential in any shore to shore movement.
16. In shore to shore assaults, economy of time afloat for troops embarked in landing craft must be considered; staging of craft to other ports may be found desirable.
17. In determining the D day and H hour, the requirements of all services should be examined in detail and given full consideration.
18. The success of the plan should not be dependent upon the employment of a fair-weather weapon, such as paratroops.

19. Forces allocated to the naval commander for the operation should be placed under his command at the earliest practicable date in order that adequate special training may be undertaken.
20. Material requirements of these naval forces should be given highest priority by the Bureaus and special effort should be made to ensure prompt shipment of material from the United States to the theater of operations.
21. All planners on the Task Force Commanders echelon (Army, Navy and Air) should be in the same building and develop their plan concurrently.
22. It is essential that the naval commander be provided with prints of all photographic reconnaissances made over enemy areas selected as the geographical objectives.
23. Information acquired through the landing of agents on enemy shores should be placed at the disposal of the naval commander.
24. A demonstration by naval forces should be planned and executed to confuse the enemy as to the locale of the major landing, and to tax his communications at the outset.
25. If light forces are available, a diversion plan employing deceptive devices should be executed in conjunction with the main assaults. Diversion bombings should be a part of the plan.
26. Where practicable, the initial movement of assault forces should be in conformity with the "cover plan."
27. PTs are suitable for use as flanking offensive screens when used in adequate numbers. When operating against German E-boats, U. S. PTs should be supported by a destroyer.
28. Submarines are eminently suited for pre - D day reconnaissance of the assault area and for use as navigational beacons to aid the approach of the assault forces to the initial transport area. The ability of submarines to lay various types of buoys to aid the assault boat waves should be exploited where circumstances permit.
29. Beach defenses to be softened by air bombing prior to D day should be determined by the planners of Navy, Army and Air in joint study.
30. Preliminary softening of the enemy prior to D day by heavy scale air bombardment is necessary. This effort should become increasingly heavy with selected targets being land communications, air fields, air forces, and fixed defenses.
31. Naval gunfire plans should provide for engagement, prior to and during the assault, of all enemy defenses that threaten the safe landing of the assault troops on the selected beaches. The control of these fires must be regulated solely by the Naval Commander.
32. The element of "surprise" should be examined with penetrating thoroughness on a realistic and practical basis.
33. The plan should provide for an "assault scale" of weapons and equipment for those military forces making the assault landings.
34. Once Division troop lists have been approved by the Army Commander, changes must be held to a minimum in order that plans of lower echelons may be developed and promulgated to the required forces.
35. After sailing from embarkation ports, the Naval and Military Commanders should receive timely enemy intelligence information by radio; the assessment of the results of pre - D day bombing missions affecting the landings should be broadcast.
36. A planning factor of at least one hour should be allowed transports in lowering boats and loading assault waves; this allows a safety factor in the event of delays caused by weather.
37. Particular attention should be given in the Naval Attack Plans to the timing of assault boat waves in order to avoid congestion on beaches.
38. The Army Attack Plans usually require the Floating Reserve to land through a prepared beach; in such cases the Shore Party elements of the Reserve Force should not be held afloat, but should be landed early on D day to augment the regular Shore Party which is invariably hard-pressed at this critical time.

39. Where hydrographic conditions of the theater permit, an anti-submarine minefield is most effective in protecting the transport area.

40. If the transport area must be used for protracted periods for maintenance of the landing force, the minefield should be supplemented by an extra-light indicator net and later, if feasible, by an anti-torpedo net.

AIR PLANS and OPERATIONS:

41. The Air Plan should be in detail and show when, where and what fighter cover and air support will be provided the naval and ground forces during the assault phases of the operation.

42. Air plans involving the transport of paratroops over naval forces should be submitted to the Naval Commander for approval.

43. Air forces participating in support of joint operations should be placed under the command of the commander who is responsible for the success or failure of the joint effort.

44. Where practicable, naval aviation should be used for close support in amphibious operations. Where this is not practicable, Army dive bomber forces should be assigned under the operational control of the Naval Commander to carry out vital close support missions until the ground forces are firmly established ashore.

45. In a theater where maritime traffic is under constant attack by enemy aircraft, it is essential that strong air protection be provided troop transport movements enroute to an amphibious assault.

46. Fighter cover by high and low standing patrols is essential over shipping anchored off the assault beaches; the scale of fighter cover provided for this purpose in this operation was inadequate.

47. Fighter Director Ships should be provided and equipped with G. C. I. for the control of night fighters. These ships should be separate from Flagships and should have freedom of movement to enable them to obtain best radar results.

48. The senior Fighter Director officer should be attached to the staff of the Commander, and should assist in the planning of fighter direction, fighter cover, aerial reconnaissance, close air support, radar coverage, communications, and AA fire control.

49. In areas where allied shipping is concentrated and cover is being provided by friendly aircraft, a plan establishing Gun Defended Areas and Inner Artillery Zones should be in effect. Such a plan should define limits for AA fire and limits for aircraft operations.

50. The employment of cruiser planes (SOC and OS2U) for spotting naval gunfire, when opposed by enemy fighters, is either impracticable or exceedingly costly. Direct fighter escort to present type cruiser planes is not considered satisfactory.

51. When practicable, Army aircraft of a type capable of defending itself against enemy fighters should be employed for spotting of naval gunfire; the Army P-51 appears to be a suitable type.

CHART-MAPS:

52. Gridded chart-maps of the assault area, on a scale of 1/50,000, having land contours at 25 meter intervals, should be constructed by the Hydrographic Office in advance of amphibious operations. The map-charts furnished by the Hydrographic Office for this operation were excellent and were invaluable for naval gunfire control.

AERIAL PHOTOGRAPHS:

53. Photographic reconnaissance of the assault area should include, in addition to usual vertical mosaics, at least one oblique sortie during the early part of the planning phase in order that beach sketches may be prepared, and an additional oblique sortie as late as possible before D day to obtain last minute changes on defenses, mines, etc. If the last-named sortie is interpreted and evaluated after the assault forces have gone to sea, detailed information must be transmitted by radio to the Flagships.

54. The determination of off-shore bars and beach gradients by "wave study" is considered accurate within acceptable limits.

AEROLOGY:

55. A qualified aerologist on the naval planning staff is essential.

56. Flagships of Naval Task Force Commanders should be provided with an aerological unit trained and equipped to furnish the special forecasts peculiar to amphibious operations.

57. A continuous radio watch of special trained operators should be maintained by Flagships to copy meteorological radio traffic and decrypted enemy reports.

58. Weather forecasts should be promulgated to all ships concerned during the assault and maintenance over the beaches phases of an operation; this traffic must be given sufficient priority to insure its timely reception.

REHEARSALS:

59. Naval Task Force Commanders should have adequate training periods for the correlation of mine sweepers, control vessels, gunfire support ships, transports, etc., in the details of their attack plans. Such training must follow the installation of special equipment, apparatus and devices to be used in the assault.

60. Adequate time should be made available to permit rehearsals to be planned in detail so as to simulate as nearly as possible the actual assault.

61. Individual RCTs should be fully landed during rehearsals prior to execution of the Division rehearsal. Full-scale landings are required to give the Shore Party, Beach Party, and boats' crews a full scale workout under service conditions.

THE APPROACH:

62. Rendezvous of forces at sea should be made in full daylight; under no circumstances should rendezvous be planned to take place at dawn or evening twilight.

63. Where possible, a suitable landfall should be made for obtaining an accurate navigation fix prior to commencement of approach to assault beaches.

64. Forces should deploy during daylight on the approach courses to the assault beaches.

65. Radar jamming vessels should be in the van of assault forces during the approach to the transport area.

66. In selecting approach courses of assault forces, consideration should be given to suitable use of fathometer and radar as navigational aids.

67. Where practicable, the approach courses should be selected to give the main assault forces a long run on the approximate approach course, with a minimum of maneuvering after entering the initial transport area.

TRANSPORTS:

68. An investigation should be made of the cargo handling gear of our combat-loaders with a view to strengthening deck fittings, booms, guys, heavier steadying lines, etc., to meet stresses imposed by unloading operations in heavy seas.

69. A central controlling authority is required at Embarkation Ports to strictly regulate the loading of combat-loaders. The Army G-4 section should function in an office in the Flagship of the Naval Task Force Commander until the transports are unloaded in the assault area.

70. Combat-loading plans should limit the materials being loaded to those required by the assault. These plans should have the approval of the Naval Task Force Commander as well as the Army Commander concerned. Once loading has commenced, these plans should not be changed without their specific approval in each case.

71. Greater attention must be given to vertical loading of transports with relation to the Army tactical plan; accessibility of anti-tank weapons must be emphasized in an assault against armored enemy forces.

72. Pallet loading should be studied with a view to wider use.
73. Each APA, XAP and AKA should be provided with 30 extra nets; additional slings should be provided these ships to take care of all vehicles in the assault waves.
74. Boat Group Commanders and Boat Officers in the assault waves should be experienced officers of the highest available ranks. The responsibility and authority of these officers should be kept alive, and improvement of boat discipline stressed.
75. Fuller briefing of boat crews in the plan of attack, and in assault beach silhouettes and land marks is necessary.
76. Boat crews of transports require additional training in night and bad weather landings of loaded boats. This training should include retraction and salvage methods.
77. Unloading Detachments ("Hatch Crews") should be increased when the unloading plans provide for unloading combat-loaded transports by using LCTs. At least 20 soldiers should be placed in each LCT to unload the craft on beaching, unless present organization of Shore Party is modified to provide this labor.
78. Unless labor troops are included in the Shore Party organization in greater numbers than now provided, unloading plans should provide for 2 soldiers to be placed in each LCVP and 4 to 6 soldiers in each LCM to unload these boats at the beach.
79. LSTs should not be employed for unloading transports unless no other types are available. When so employed, special detachments of troops should be assigned LSTs to load stores and unload at beaches.
80. Transports should establish as standard doctrine a Condition IV watch which will provide sufficient control officers and gun crews to meet an air raid by using ready service boxes, thereby permitting unloading to proceed without interruption.

MERCHANT SHIPS:

81. When merchant vessels are scheduled to arrive in follow-up convoys immediately after the assault, each ship should be deck loaded with the maximum number of LCM(3)s (complete with spare parts, diesel fuel oil and lubricating oil) manned by U. S. Navy personnel. One officer-in-charge and one motor machinist's mate should be assigned to each ship.
82. Greater attention must be given to the segregated stowage of explosives and inflammables in merchant vessels entering the assault area.
83. Adaptors should be provided to permit interchange of hose, nozzles, and other fire fighting equipment when Allied naval and merchant vessels are engaged in the same operation.

LANDING SHIPS and CRAFT:

84. In combat-loading landing ships and craft particular care must be taken that beaching draft is not exceeded.
85. Landing craft should be used primarily as assault craft and for the immediate follow-up of assault forces. They are not designed for "ferrying service." Army build-up and maintenance should be carried in merchant vessels.
86. Landing craft can transport the necessary logistic maintenance to ground forces by unloading immediately in the rear of our front lines, when our Army flanks reach to the sea. This method is most effective when land motor transport is heavily taxed or when roads are mined and demolished by enemy action.
87. Combat-loading of LSTs require of TQMs a preliminary study of deck arrangements and template loading, in order that vehicles may be properly loaded under their own power. The main deck of LSTs should be loaded to provide increased AA protection to the ship.
88. LSTs are not suitable for carrying stores; if such employment is contemplated, these ships should have installed winches, booms, and other mechanical means for discharging stores to boats and DUKWs alongside.
89. When LSTs cannot be beached, the most effective methods of unloading LSTs, in order of preference, are: (1) over naval pontoon causeways, (2) into LCTs, and (3) into DUKWs.

90. Side carrying of naval pontoons by LSTs is a more desirable method of transport than towing.

91. A DUKW, manned by the pontoon crew, should be a part of the equipment of each LST fitted as a pontoon-carrier.

92. LSTs should be altered as follows:

- (1) Strengthen ramp chains and fittings.
- (2) Install 10,000 gallons per day distilling plant.
- (3) Install 5-ton boom and winch on main deck in way of hatch.
- (4) Install cross-connection between Fire and Bilge pumps and Fresh Water tanks, and discharge piping from Fire and Bilge pumps to bow with 2½" hose connection, to enable discharge of potable water to shore tankage.
- (5) Install barrage balloon fittings, winch, etc., provide stowage for barrage balloons, helium gas cylinders, and accessories.
- (6) Install 150 portable bunks in after end of tank deck on all 6-davit LSTs.
- (7) Install fittings and provide gear on LSTs designated to side-carry pontoon causeways.
- (8) Increase diameter of one forward inboard hole on bottom of ramp from 6" to 12" to provide socket for King pin on causeway.

93. LCI(L)s are not suitable for carrying stores; they may be used for transferring personnel from transports to shore, and are particularly well suited for use as salvage vessels on the beaches.

94. One LCI(L), especially fitted out with salvage equipment and trained personnel, should be provided as salvage vessel for each Division beach; each Battalion beach should be provided with one LCM carrying a bulldozer and special salvage gear and trained personnel.

95. The present ramps on LCI(L)s are too heavy and cumbersome. During this operation, ramps were lost due to difficulty in retracting, ramp brakes did not hold, and in heavy seas ramps were thrown back off the rollers. Ramps should be redesigned to provide lighter, longer and wider ramps with suitable power retraction.

96. Assault LCTs should be loaded in such manner that tanks and S. P. guns are able to fire during the approach.

97. LCTs, employed to unload transports, should be provided with double crews to enable continuous operation.

98. LCTs are eminently suitable for side loading from LSTs.

99. LCTs should be altered as follows:

- (1) Strengthen ramp chains and fittings.
- (2) Render amidship section of bulwark portable on each side to permit side loading and unloading.
- (3) Strengthen hull to prevent working and buckling in heavy seas.

100. LCVPs should be altered as follows:

- (1) Reduce or eliminate down-by-the-bow trim.
- (2) Improve design of rudder and skeg to reduce time required to remove and repair.
- (3) Substitute cast steel for brass lifting pads and fittings.
- (4) Provide reinforcement in way of cleats, and on Chris-Craft increase size of cleats.
- (5) Provide standard ring-type slings for all boats; discard the Chris-Craft curved bar-type sling.

CONTROL VESSELS:

101. There is a definite need for Control Vessels, of the LCC type, having adequate navigational and signalling equipment.

102. Greater emphasis should be given to the training of control vessels in the ship to shore movement; these vessels should be an integral part of amphibious forces; attack plans of Naval Task Force Commanders should provide in detail for the full employment of Control Vessels.

SCOUT BOATS:

103. Greater attention should be given to the selection, training, equipping and briefing of Amphibious Scouts.

104. Scout boats should be fully employed as smokers to cover assault craft under favorable wind conditions.

105. Scout boats should be employed to assist in the hydrographic surveys off the assault beaches.

SHORE PARTY:

106. Training of the Shore Party should include full-scale landing of infantry divisions with supplies and equipment by day and night, practical training in all types of boats and landing craft, and in working cargo on board ship and as winchmen.

107. The Shore Party organization requires immediate reorganization to provide adequate labor troops to unload boats on the assault beaches until the combat-loaded transports have landed artillery, anti-tank weapons, and ammunition replacements.

108. The Shore Party should develop, prior to the assault, detailed plans for the organization and location of beach dumps. Vehicles should be earmarked for beach to dump traffic and these trucks should not be diverted from such employment without the approval of the Shore Party Commander.

109. When assault beaches are backed by extensive dunes without road exits, the Road Construction units of the Shore Engineers must be greatly augmented.

110. The Shore Party Commander must be fully conversant with the unloading plans and his organization must allow for some flexibility in the landing of army stores and equipment at other than planned beaches.

111. The Engineer Shore Regiment should not be withdrawn from the beaches to inland combat positions unless the Commanding General is prepared to accept a complete break-down in his supply system.

112. There is a need for air-raid sirens or warning devices on beaches where large numbers of craft and personnel are employed.

113. More guns of large caliber should be assigned to AA beach defense which should be centrally-controlled on each division beach.

114. Slit trenches and fox holes should be promptly dug on beaches near boat landing points.

115. Mobile fire fighting trucks should be part of the Shore Party equipment; fires in beach dumps caused by enemy strafing produce serious losses of maintenance stores unless extinguished by fire fighting equipment.

116. Stores must be segregated in dumps; the piling of ammunition, food, gasoline, and miscellaneous stores in one vast mass presents a target to enemy aircraft.

117. Beaches must be kept clear of stores by movement to beach dumps behind the dune line.

118. Greater attention must be given to the prompt erection of beach markers; the marking of safe landing points for DUKWs is important.

119. Prompt clearance and sign-posting of paths through minefields is essential prior to the arrival of DUKWs and motor transport on the beaches.

120. Until the transports are unloaded, DUKWs should not be diverted to the interior beyond the dune dumps; DUKWs may be used advantageously to unload LSTs and merchant ships.

121. Closer coordination and more positive land-line communications should exist between Army and Navy Medical groups on shore; casualties should not be brought to exposed beaches until boats are available to evacuate them at once.

122. Military Police must keep idlers off unloading beaches or impress them into labor of unloading boats at the shore line. Troops, upon landing, must be directed to properly marked

staging areas and not be allowed to loiter on beaches. Military Police must be particularly active at night to prevent unauthorized absence from beaches by Shore Party personnel.

BEACH PARTY:

123. Beach Battalions should receive intensive shipboard training of all ratings along pre-determined lines.

124. Shore training of Beach Battalions should include basic field training of the soldier, overhead firing and battle courses. Joint training with the Shore Party Engineers should include defensive tactics of the rifle squad and platoon, the detection, removal and destruction of enemy mines and booby traps, removal of wire and beach obstacles, swimming and life saving.

125. The plans of Naval Task Force Commanders should provide in detail for the hydrographic surveys to be conducted at first light off assault beaches, and for the utilization of this information by the Beachmaster.

126. The plans of Naval Task Force Commanders should provide in detail for the execution of traffic control off assault beaches.

127. The plans of Naval Task Force Commanders should provide in detail for the boat salvage organization off assault beaches.

128. The Beachmaster should be fully conversant with the attack plans and the unloading plans showing Army priority of items.

129. Beachmaster should be officers of adequate rank, experiences and personality.

130. Personnel of the Navy Beach Battalions should be garbed in a distinctive uniform, and helmets should be marked so as they may be identified on the beaches.

131. Except in an emergency, personnel of Naval Beach Parties should not be diverted from their assigned tasks.

132. Navy Beach Battalions should be provided with adequate motor transport to enable the organization to function on beaches of a wide frontage. They should have as organic equipment 12 jeeps and 10 2½ ton trucks with 1-ton trailers.

133. Each infantry division beach should be provided with a "Jaheemey" with a bulldozer as a prime mover. The "Jaheemey" must be completely rigged prior to being landed on the beach.

134. Naval Combat Demolitions Units should be utilized in amphibious operations to assist in the removal of underwater obstacles at assault beaches and later assist Beachmasters in salvage, marking of channels, and other off-shore work.

135. Beach Parties required to remain ashore for protracted periods should have as additional equipment such items as tentage, bedding rolls, field kitchens, water-making apparatus, etc. Cooks should be included in the complement. Special items as mosquito bars, insect repellents, flea powder, etc., should be provided.

136. Beach Parties should be relieved at the earliest opportunity by Advance Base organizations; Beach Parties normally should withdraw from the assault area with the combat-loaded transports or as soon thereafter as the military maintenance situation permits.

EVACUATION OF CASUALTIES:

137. The operational control of hospital ships should be simple and direct.

138. In shore to shore movements, LSTs should be used as hospital ships if regular hospital ships are not available. Such LSTs, as designated for this use, should be provided with standee bunks, and the medical complement should include one officer and four enlisted men.

PRISONERS OF WAR:

139. Combat-loaded transports carrying wounded should not be used for the evacuation of Prisoners of War.

140. The Army should provide guards for Prisoners of War embarked in naval ships; this should be set up in the Army-Navy plans; the unexpected withdrawal of combat troops for this

purpose is not desirable. The Navy ships, having been specified in the plans for evacuation of Prisoners of War, will have prepared proper cages, etc., on board ship to receive the evacuees.

141. The factors determining the capacity of ships for accommodating Prisoners of War were sanitary facilities, life-saving capacity, and the number and nature of casualties embarked.

142. All ships carrying Prisoners of War should be thoroughly fumigated as soon as the prisoners are disembarked. The Army-Navy plans should make provisions for this fumigation at ports designated in the plans as the discharge port of prisoners.

BARRAGE BALLOONS:

143. Lethal Barrage Balloons Units of trained naval personnel should be provided each APA, XAP, AKA, LST and merchant vessel included in the assault forces.

144. Army balloon units should not be eliminated from Troop Lists on the pretext that such units are not "fighting troops"; lethal balloons are essential in amphibious operations.

145. Army balloon batteries, embarked in combat-loaders for subsequent landing on shore, should so stow their equipment as to be readily accessible for unloading. Army balloons must be in position over beaches by daylight on D day when enemy air delivers its full attack on the assault beaches.

146. Barrage balloons should be erected every 200 yards on the beach, over gasoline and ammunition dumps, and at the seaward and shoreward ends of each pontoon causeway.

SMOKE:

147: Troop convoys enroute to an assault should maintain maximum sustained speed and zig-zag. At night, during moonlight, a smoking plan must be continuously carried out to thwart enemy torpedo aircraft.

148. Transports, merchant vessels and LSTs must give greater attention to the laying of smoke screens during an air alert; the plans of Naval Task Force Commanders should cover the details of the smoking plan.

149. At night, during moonlight, smoke must be laid by small craft and/or ship's boats, (and by beach smoke pots, if wind is favorable) to cover the transport anchorage. This screen should be thickened at dawn until sufficient daylight exists for our gunners to see enemy aircraft.

MINE SWEEPING:

150. Sufficient mine sweepers should be made available to the Naval Task Force Commander to enable him to assign sweepers to each Task Force Commander adequate in numbers to sweep transports in to their initial area and combatant ships in to close gunfire support areas.

151. An effective method of sweeping or detonating mines in shallow water should be developed.

NAVAL GUNFIRE:

152. Neutralization of assault beach defenses by full employment of naval gunfire is a prerequisite to a successful landing against opposition.

153. The training of Naval Gunfire Liaison officers should include some of the elements of Ranger training, particularly overhead fire, battle courses, and physical conditioning courses.

154. Dropping of Naval Gunfire Liaison officers by parachute may be found advantageous if the technique is developed further.

155. Even though ships are illuminated offshore by enemy searchlights, ships are not always visible from shore. For this reason it may be advantageous to hold fire even when illuminated, other things being equal.

156. The naval attack plans should provide for wider use of the 5"/38 white phosphorous projectile in laying smoke screens on the flanks of assault beaches and for demoralizing enemy troop concentrations.

157. When naval gunfire compels the enemy to evacuate an area, the Army ground forces should advance promptly to exploit the enemy's retirement.

158. The rocket armament of LCS(S)'s is most effective in neutralizing beach areas.

159. Destroyers are superior to British LCGs in rendering close supporting fire, particularly when target is obscured.

160. AA fire discipline in our ships requires improvement. Graduates of aircraft identification schools should be assigned to all destroyers and larger ships.

161. There is a vital need for the development of our radar installations to enable the detection of enemy aircraft approaching ships from landward.

162. Enemy bombers frequently direct bombs at night against targets which disclose their importance by the volume of their fire.

163. The use of tracer ammunition at night is a controversial subject. A heavy barrage at night usually keeps enemy bombers at heights where they must resort to area bombing yet, on occasion, enemy bombers have sought shelter in our flak when pursued by our night fighters.

164. Non-tracer 40 mm projectiles should be developed for use of these batteries at night when controlled by radar.

165. A self-destroyer 20 mm projectile should be developed.

166. High capacity ammunition employed by our 6" cruisers was very satisfactory.

OPENING OF PORTS:

167. Naval officers destined to be Port Directors of captured ports should be present during the planning, and should participate in the development of naval administrative plans, and in the supervision of procurement, assembly, loading plans and movements of base personnel and equipment.

168. An intelligent study of the enemy port facilities should form the basis for the determination of the requirements of Port Parties to be landed. Much equipment shipped as Lions, Cubs, etc., is not applicable to enemy ports in this theater.

169. Army loading plans must make provision for the inclusion in the assault movement of Naval Port Parties and essential equipment required for the prompt opening of ports to be captured on D day. The remainder of Advance Base Party equipment and stores must be provided for in follow-up movements.

170. Naval Combat Intelligence Officers should be landed early in the assault to carry out their special missions. Upon the opening of enemy ports they should join Advance Base Parties for the organization of port security.

171. When major ports become available for our merchant shipping, the Army plans must provide for the availability of stevedore and dockside labor troops to unload such shipping in ports. It is not a naval responsibility to provide naval personnel in the task of unloading merchant vessels.

STAFF ORGANIZATION:

172. The staff organization of the Naval Commander Western Task Force as constituted was found to be adequate for the operation.

PRESS RELATIONS:

173. From a naval viewpoint, the press coverage of the Sicilian campaign was inadequate and ineffectual.

COMMUNICATIONS:

174. Large scale amphibious operations require the employment of specially designed AGC's.

175. During the planning stage of an operation, adequate communication personnel and material must be available in the theater of operations.

176. Vessels of the U. S. Navy taking part in the operation require improvement in the individual and coordinated use of air search radar under air attack conditions.

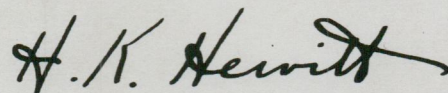
177. Better discipline in the use of voice circuits is required.

178. In a theater where naval forces of a number of nations are employed in amphibious operations, there is a need for a common communication language embodying procedure, call signs and cryptographic aids.

The relentless vigor with which the assault was pressed home, regardless of loss or difficulty, merits the highest praise.

The initiative, perseverance, and loyalty of the officers and men comprising the Western Naval Task Force is acknowledged with pleasure. The Naval Commander is fully aware of the labor and effort expended in meeting the requirements of the planning, training, material readiness and employment of the large naval forces of different types and characteristics.

The co-operation manifested between the Army and Navy, and the comradeship and combat efficiency demonstrated by units of the Royal Navy and the United States Navy in joint action against a common foe presages the ultimate victory of the Allied Nations.

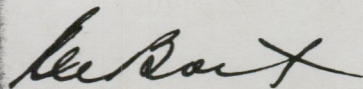


H. K. HEWITT,
Vice Admiral, U. S. Navy.

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J. M. BOIT
Commander, U. S. N. R.
Flag Secretary.

INDEX OF ENCLOSURES

ENCLOSURE (A)	SICILY — BEACH DATA
ENCLOSURE (B)	ASSAULT TRANSPORT ROUTES
ENCLOSURE (C)	ASSAULT TRANSPORT ROUTES
ENCLOSURE (D)	ASSAULT ROUTES
ENCLOSURE (E)	ATTACK FORCES
ENCLOSURE (F)	ARMY ATTACK PLAN (Diagrammatic)
ENCLOSURE (G)	GUNFIRE SUPPORT AREAS
ENCLOSURE (H)	MINEFIELDS & ANCHORAGE
ENCLOSURE (I)	RETURN ROUTES
ENCLOSURE (J)	NORTH COAST OPERATIONS