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AL SERIES, NO. 1

AUGUST 9, 1942

BRITISH COMMANDOS

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Military Intelligence Service
War Department
Washington, August 9, 1942

Special Series
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TABLE OF CONTENTS

		<i>Para- graphs</i>	<i>Page</i>
Chapter 1	BACKGROUND OF THE COM- MANDOS	1-10	1
SECTION I	ORIGIN AND ORGANIZATION	1-7	3
	Introduction	1	3
	Organization	2	5
	Principles of Leadership and Discipline	3	6
	Procurement of Personnel	4	7
	Administration	5	9
	Training Principles	6	11
	Arms and Equipment	7	13
SECTION II	INDEPENDENT (COMMANDO) COMPANIES IN AUSTRALIA AND NEW ZEALAND	8-10	17
	General	8	17
	Tables of Organization and Weapons	9	18
	Standard Equipment	10	22
Chapter 2	COMMANDO TRAINING	11-23	25
SECTION I	SPECIAL AND COMBINED TRAINING	11-15	27
	General	11	27
	Special Training	12	28
	Instructor Training Courses	13	33
	Comments by a U. S. Observer	14	37
	Combined Training	15	39
SECTION II	MOUNTAIN TRAINING	16-21	45
	General	16	45
	Food	17	47
	Clothing	18	48
	Footgear	19	49
	Packs	20	51
	Mountain Tents and Bedding	21	52
SECTION III	COMMANDO RATIONS	22-23	53
	General	22	53
	Typical Ration	23	53
Chapter 3	COMMANDO OPERATIONS	24-40	55
SECTION I	VAAGSO (NORWAY) RAID	24-27	57
	General	24	57

	<i>Para- graphs</i>	<i>Page</i>
Report of Naval and Military Com- manders Who Carried Out the Vaagso Raid.....	25	59
Appendices.....	26	88
Notes for Lessons by Boarding Party Commander.....	27	96

SECTION II

BRITISH TASK FORCE, SPITSBERGEN OPER- ATION.....	28-40	99
Strategic Value.....	28	99
Special Training.....	29	100
Composition of Force.....	30	100
Unity of Command.....	31	101
Voyage.....	32	102
Landing and Operations.....	33	103
Major Demolitions.....	34	105
Evacuation of Norwegian Settlements.....	35	106
Signal Operations.....	36	107
Secrecy.....	37	108
Appendix A—Composition of Task Force.....	38	108
Appendix B—Diary of Newspaper Man with Task Force.....	39	110
Lessons of the Spitsbergen Operation.....	40	114

Chapter 4

BRITISH LESSONS FROM COM- MANDO OPERATIONS.....	41-58	117
Value of Raids.....	41	119
Choice of Target.....	42	120
Choice of Landing Places.....	43	121
Reconnaissance.....	44	121
Size of Raiding Force.....	45	122
Sea Transport.....	46	122
Selection of Dates; Tide Factors.....	47	124
Timing.....	48	125
Naval Plan.....	49	126
Air Plan.....	50	126
Land-Force Plan.....	51	128
Training and Rehearsals.....	52	130
Security.....	53	132
Clothing and Equipment.....	54	133
Recognition at Night.....	55	134
Action after Landing.....	56	135
Return.....	57	137
Publicity.....	58	138

Chapter 1

BACKGROUND OF THE COMMANDOS

Paragraphs

Section I ORIGIN AND ORGANIZATION . . . 1-7

Section II INDEPENDENT (COMMANDO) COM-
PANIES IN AUSTRALIA AND NEW
ZEALAND 8-10

Origin and Organization

1. Introduction.—Since the decisive outcome of the campaigns in France and the Low Countries left the British Army considerably inferior to the German Army in strength and matériel, the British had no choice but to avoid full-scale fighting until new power could be marshalled. Accordingly, shortly after the withdrawal from Dunkirk in June 1940, the Imperial General Staff organized a Special Service Brigade under the control of the Director of Combined Operations, Admiral of the Fleet Sir Roger Keyes, who had learned the technique of coastal raids in the First World War. The Brigade was composed of raiding parties and task forces—roving hit-and-run fighters—and soon came to be known as “commandos” after a Dutch word, derived from the Portuguese, that had come into familiar use in the Boer War as a term describing any military body as well as a raiding party. Under Sir Roger the commandos carried out several “pin-prick” raids on the French coast and a larger raid on the Lofoten Islands in Norway, in which they developed their peculiar tactics.

By the fall of 1941 the commandos were reorganized and placed under the direct control of Captain Lord Louis Mountbatten, who, as Chief of Combined Operations, has been given the ranks of vice-

admiral in the Royal Navy, lieutenant-general in the Army, and air marshal in the Royal Air Force, in order that the three services may have equal recognition in planning and carrying out combined operations. Under his leadership the commandos carried out the raid on Vaagso, Norway, in December 1941.

Actually the reorganization of the commandos consists chiefly of a reorientation of aims rather than a change in organization and administrative methods. The Brigade of commandos remains, for example, under the control of Combined Operations, which operates under the Ministry of Defence, an office held by the Prime Minister. However, the Brigade does not in fact train or function normally as such; the separate commandos are stationed in various places and are trained separately. The combined training of the commandos with naval and air units continues essentially as first planned; and now that Great Britain has regained the offensive power which she temporarily lost in the Battle of France and has otherwise increased her war-making potentialities, it is expected that the scope and number of commando operations will increase considerably.

The primary mission of the commandos is to carry out raids, and for that purpose they are specially and rigorously trained. Raiding parties may vary in size from a small reconnaissance group to a complete commando troop or even a larger force, and every raid will aim to destroy enemy installations and to obtain information. The secondary missions

are: (1) to act as an elite or shock-assault brigade to seize and hold a bridgehead for covering a landing in force, and (2) to provide specially trained covering forces for any operation. In the Far East the scope of the commandos' operations will further include their use in support of guerrilla warfare in friendly and hostile areas. They will frequently be called upon "to show the flag"—to undertake an invasion primarily to encourage the resistance of small or conquered countries.

Commandos, therefore, will play an increasingly important role, and the available material on their history, organization, and experience has been digested in this bulletin for the purpose of providing a guide to the offensive possibilities of such units. An account of the British raid on Spitsbergen has been included because this operation, though not carried out by commando troops proper, had many of the characteristics of commando raids.

2. Organization.—The commandos adhere closely to the guerrilla system, in which small bands join together to form larger but easily manageable units. The basic organization is a "troop" of 62 enlisted men, commanded by a captain and divided into two sections under lieutenants, a section being the usual complement for one landing craft. Sections are composed of subsections (squads) commanded by sergeants. The next higher organization is the commando proper, which consists of six troops. The commando proper is led by a lieutenant-colonel, who makes a point of knowing every man in his organiza-

tion and tries to develop among them a feeling of personal attachment and mutual confidence. In addition to the six troops, there is in each commando a headquarters of 7 officers and 77 enlisted men organized in Administrative, Intelligence, Signal, and Transport sections; also, there are attached 1 surgeon and 7 men from the Royal Army Medical Corps and 2 armorers from the Royal Army Ordnance Corps. The brigade of commandos is under the direct command of a brigadier.

3. Principles of Leadership and Discipline.—“Leadership” rather than “command” holds together the commando unit. Leadership is absolute. No higher command can intervene between the member and his immediate chieftain.

This extreme type of organization obviously could not be adopted in units formed under Regular Army auspices. However, Army traditions and conventions have been blended with the principles of guerrilla fighting to adapt them to the character of the British soldier. For commando service, regular troops of a high order of intelligence and daring have been selected, and have been physically conditioned and specially trained to deal swift and telling blows. As the modified plan now works out, commando officers are allowed to form their own units. They also have the privilege of sending any man back to his unit without explanation or right of appeal. On the same basis, enlisted men are given the right to return to their Army organization at any time, after giving

notice and without stating their reasons. Experience has justified these innovations, for it has seldom been necessary to introduce any punishment other than a warning of dismissal.

4. Procurement of Personnel.—The significant fact about the commandos is that all personnel are volunteers. The first recruits were called by a circular letter sent from the War Office to the commanding generals of the five commands (armies). They were asked to call for volunteers “for special service” the nature of which was not indicated. The letter stated, however, that the men would not be asked to parachute unless they specifically volunteered for it, and promised that every volunteer would be interviewed privately by an officer. Thus a man had the opportunity to withdraw his application, if he wished, after getting some idea of the service that would be expected of him.

In general, the stated requirements for service in the commandos were:

- a. Youth and physical fitness;
- b. Intelligence, self-reliance, and an independent frame of mind;
- c. Ability to swim;
- d. Immunity to seasickness.

Items c and d were found particularly essential in actual commando operations; and in addition to the above requirements, every volunteer had to be a fully trained soldier. With the exception of trained staff officers, personnel of all arms were eligible, but

this latitude proved to be too broad and was corrected after it was found that too high a proportion of skilled technicians were serving as infantrymen in the commandos. In fact, so many outstanding men volunteered that some resistance to the commando idea developed among unit commanders of the Army. As a result, it became necessary to obtain commando personnel from training centers.

At present the commandos contain men from every regiment in the British Army, from Canadian regiments, and from the Royal Marines. In a typical commando 50 to 90 different regiments may be represented. Officers and men are allowed to retain their regimental insignia, for these have been found to be a particularly strong incentive for each man to excel in his duties as a representative of his regiment. All personnel are seasoned and experienced soldiers, and a very high percentage have had combat experience in either Norway or France or in both. To lead the commandos the commanding generals were also asked to select officers who were not above the rank of lieutenant-colonel and who were under 40 years of age. These officers were also required to possess tactical ability and sound military judgment, a high order of leadership, and dash. The final selections from the army commanders' lists were made in the War Office.

The commando leaders selected their troop leaders from lists of officer volunteers at various army headquarters. In turn each troop leader picked his two junior officers. Then each set of 3 troop officers

went through the list of volunteers until 62 noncommissioned officers and enlisted men were interviewed and accepted. This procedure took time, but when it was completed every officer had the satisfaction of knowing that his men were personally selected. From those eliminated the commando leader made up a list of the more likely men who would be suitable for replacements, although, as the plan matured, a depot unit was formed to train additional volunteers as a commando reserve.

A very large proportion of noncommissioned officers is included in each troop, not only to facilitate tactical employment in very small parties but to offer reasonable prospects of promotion to the superior men who have been flocking into the commando ranks.

Since officers are detailed to the commandos, and not permanently assigned, they receive normal consideration for promotion in their Army units. Many officers have preferred to remain with the commandos rather than to accept a higher rank, if this meant returning to their old units.

5. Administration.—It was decided that the commandos should receive no quarters or rations from the Army. Instead each man draws an allowance of 6s/8d (about \$1.40 a day, with double the amount for officers) with which to provide himself with lodging, food, transportation to and from his troop headquarters, and the upkeep of a suit of civilian clothes. (The civilian suit is required, for example, for se-

crecy in "trickling" troops into a home-port area prior to embarking for a raid.)

As for housing, each commando is assigned to a seaside town in which to organize and carry on training with naval units. On arrival at their "home town" newly assigned commando members disperse to find themselves lodgings. A recreation ground or local hall is used as a rendezvous where the men can join with members of the naval unit for recreation or training.

A suitable house is used as a supply depot and as a headquarters for a small administrative staff in order to relieve the commando leader of routine paper work concerning such things as pay, records, and equipment. This administrative staff is not designed to go on raids, and the administrative officer is usually a rather elderly major.

The system of individual maintenance allowances is merely the application of the normal practice of handling civilian labor in the Army, and the commando leaders are unanimous in its praise. After about 4 or 5 months' experience, they reported at a War Office conference that this system did more than anything else to teach the men self-reliance and to instill the "commando spirit." It considerably reduces administrative overhead and leaves every officer and enlisted man free to devote his whole time to training. He has none of the guard and other camp or garrison duties which normally cut into combat training. The system is immensely

popular with the men, and it adds weight to the threat of dismissal for any breach of discipline.

The discipline and morale of the commandos is exceptionally high, as would be expected of a group of select volunteers. An excellent spirit of fellowship prevails between officers and enlisted men, and is evident in all the training and exercises. Officers participate in athletics with the men, and two half-days a week are set aside for rugby, soccer, cross-country runs, boxing, etc. All are required to take part in one form of sport or another. The fact that commanders may immediately return a man to his unit for breach of discipline or for ineptitude has an important effect in maintaining the high disciplinary level. The varied and realistic nature of the training undertaken is likewise an aid to morale. Current-events talks are given weekly by all troop commanders, and outside speakers (naval officers, civilians, professors, etc.) give weekly lectures on the larger aspects of the war. Frequent week-ends are granted from Friday p. m. to Monday a. m., and a liberal leave-policy obtains in order to prevent the men from going stale.

6. Training Principles.—Training of commando personnel is designed to develop individual fighting initiative, and is based entirely on offensive principles. The training program seeks the development, to the very highest possible degree, of stamina and endurance under any operating conditions and in all types of climate. It aims to perfect all individuals

in every basic military requirement, as well as in the special work likely to be encountered in operations, namely: wall climbing, skiing, obstacle running, demolition, street fighting, both night and day shooting, solution of tactical problems, surmounting barbed wire, handling grenades and torpedoes, etc. Every man is expected to achieve some particular qualification, as motorcyclist, driver, boat operator, engineer, etc. The training succeeds in developing at one and the same time confidence, initiative, and ingenuity in the individual and perfect teamwork in the group. Commando leaders are given a free hand and a reasonable cash allowance to organize their own training program. Particular stress is placed on swimming and boating, although other exercises are also practiced in order to develop rugged physical condition. Stalking and the use of cover and concealment are stressed, but greater emphasis is placed on night problems, for the success of most raiding operations depends on an ability to work silently, with precision, in darkness.

The idea that no type of operation is unusual is inculcated in the men. At a moment's notice they should be able to ride bicycles or motorcycles; drive automobiles and trucks of unfamiliar types; ride horses and camels; and travel in aircraft, ships, and boats of any sort, all depending on the nature of the operation, the availability of means of transport, and the terrain in the various theaters of war. Commandos are sometimes carried as air-borne troops and receive special training for air-borne operations.

In the beginning, training in combination with naval units consisted of practice in handling miscellaneous watercraft, which were placed in charge of young volunteer Naval Reserve officers, with yachtsmen and fishermen as their crews. Now, however, the commandos have regularly manned ships with which to train and to sail in combined operations. The introduction of cooperative training with naval units, soon after the commandos were formed, was considered an essential element of the whole plan, for the "seaworthiness" of the commandos gives them their mobility. Thorough amphibious training enables these units to avoid obvious, sandy beaches and to strike unexpectedly on rocky coves or rugged headlands, making the most of the element of surprise.

The commando brigade is prepared to accept casualties in the training program rather than suffer the 50 percent or higher battle casualties that would surely result were the personnel inexperienced or unprepared for the realities of the battlefield. All training, therefore, is conducted with the utmost realism. Wide latitude is accorded commanders in the selection of methods, and thus the development of initiative and ingenuity in the solution of battle problems is encouraged. A similar latitude is accorded troop commanders.

7. Arms and Equipment.—In choosing the kinds of arms and equipment suitable for commandos, the determining factor was the type of operations in which they would engage. In the summer of 1940

the Germans were in positions along the coast line of Europe, from Narvik in northern Norway to Biarritz in southwestern France. Any part of this coast was within reasonable striking distance from the British Isles. In view of the Royal Navy's superiority at sea, the raiding opportunities for commando units seemed unlimited. The task was essentially one for an amphibious force—a sort of super-marines—who would fight only with equipment which could be carried on their backs from a boat to a beach. They would also need the guerilla's traditional mobility on any terrain, which meant that vehicles larger than bicycles, and perhaps than a handcart, were not practicable. Any better means of transport would have to be captured at the scene of operations.

Consequently, regulation requirements for the number and allocation of weapons are not prescribed, but in every case distribution is made according to the tactical requirements of the particular mission to be performed. Every man who joins the commandos brings his own rifle or pistol, and he is also provided with a fighting knife, which is used by the commandos with particular effectiveness. Each commando headquarters has a separate store of extra weapons so that extreme flexibility in armament is assured. A typical store contains: Bren guns; Thompson submachine guns; caliber .50 antitank rifles; 2-inch and 3-inch mortars with a supply of both smoke and high-explosive shells; defensive (fragmentation) Mills hand grenades; offensive

(plastic body, concussion type) hand grenades; smoke pots; Very pistols; "knuckle dusters" (brass knuckles); "Limpets" (magnetic, acid, high-explosive mines), one type suitable for use against ships and another for use against tanks; and demolitions of all types. Each troop is equipped with Bren guns, Thompson submachine guns, an antitank rifle, and a 2-inch mortar; normally each subsection is allocated one Bren gun and a submachine gun, the allocation of the antitank rifle and the mortar being left to the discretion of the troop commander.

The clothing and equipment furnished commandos includes a variety of types. Normal clothing is "battle dress," a two-piece woolen garment, stout shoes, and leggings. In colder weather a sleeveless button-up leather jacket which reaches the hips is worn over or under battle dress; a two-piece denim dungaree is also provided for wear over battle dress in damp or rainy weather. The men are further equipped with cliff-climbing and with hauling materials, such as rubber-soled shoes and toggle-and-eye ropes. A wool undervest and a heavy-ribbed wool cardigan with long sleeves and turtle neck are also available for cold-weather wear. Overcoats are never worn in training or in operations, even in severe weather. All clothing is designed and worn solely with a view to comfort and utility under actual operating conditions. No leather belts are worn either by officers or enlisted men; a fabric waist-belt is provided. In addition to his weapons, the individual soldier generally receives such items as

these: Tommy (individual) cooker; lensatic compass; field rations; skis and poles; individual waist life-belt ("Mae West"); Primus stove; 1-gallon thermal food-container; gas cape; wristlets. Troops are equipped with two-man rubber boats; plywood (sectionalized) canoes; collapsible canvas canoes; bamboo and canvas stretchers; 2-inch scaling ropes; 1-inch-mesh heavy wire in rolls for crossing entanglements; and toggle ropes. Transportation equipment for each commando includes Hillman pick-up 1,500-pound trucks, motorcycles, and one 3-ton truck. Communication equipment for each troop includes a number of portable radio sets, voice-and-key type, weighing 36 pounds with a voice range of 5 miles; semaphore flags; blinker guns; Very pistols and flares.

Independent (Commando) Companies In Australia and New Zealand

8. **General.**—The Australian and New Zealand Armies have several units which are the equivalent of commandos but are designated as independent companies, organized on a platoon instead of a troop basis. The total strength of each company is 267 officers and enlisted men. The primary purpose of the independent companies is to educate remote and undefended communities to cooperate in striking back at any enemy that might land on Australia, New Zealand, and other nearby islands of the British Empire. These companies will also be used in the warfare of the southwest Pacific for manning new bases and for reconnoitering. Eventually they will also operate against the enemy in his own as well as in friendly territory.

In general, the same high standards are required for personnel in the independent units as are demanded of the British commando members. Trained soldiers, single and without dependents, between 20 and 40 years of age, are selected. They must be of good physique and health and have courage, determination, intelligence, and individuality; and they must be amenable to strict discipline.

Other requirements are unassailable loyalty and reliability.

As in Great Britain, the independent companies receive special training at an infantry training center that was organized for this purpose. The basic course of instruction takes 6 weeks, but this is followed by combined training with units of the Royal Australian Navy and the Royal Australian Air Force in places suitable for amphibious air operations.

9. Tables of Organization and Weapons.—The following tables show the organization of the independent company, and its weapons:

INDEPENDENT COMPANY

War Establishment (Table of Organization) (Provisional)

I—SUMMARY OF RANKS

	Co. Hq.				Three Platoons Each				
	Command and Administration	Royal Aircraft Establishment	Engineer section	Total: Co. Hq.	Platoon Hq.	Three sections Hq. (each)	Three sections (each)	Total: platoon	Total: company
Majors-----	1			1					1
Captains-----	11			1	1			1	4
Lieutenants-----		1	1	2		1		3	11
Total: Officers-----	2	1	1	4	1	1		4	16
Company Sergeant-Major (First Sergeant)-----	1			1					1
Total: Warrant Officers-----	1			1					1
Company Quartermaster Sergeant-----	1			1					1
Sergeants-----		1	1	2	1			3	5
Total: Staff Sergeants and Sergeants-----	1	1	1	3	1			3	6

¹ Second-in-command.

INDEPENDENT COMPANY—Continued
War Establishment (Table of Organization) (Provisional)
 I—SUMMARY OF RANKS—Continued

	Co. Hq.				Three Platoons Each			
	Command and Administration	Royal Aircraft Establishment	Engineer section	Total: Co. Hq.	Platoon Hq.	Three sections Hq. (each)	Three sections (each)	Total: platoon
Corporals	2	1	1	4			2	6
Sappers (engineers)		15		15				15
Privates	8		26	34	7	2	14	55
Drivers, M. T. (motor transport)	2			2				2
Total: rank and file	12	16	27	55	7	2	16	61
Total: other ranks (enlisted men)	14	17	28	59	8	2	16	62
Total: all ranks	16	18	29	63	9	3	16	66
Attached:								
Australian Army Medical Corps (A. A. M. C.):								
Captain	1			1				1
Privates (medical orderlies)	4			4				4
Total: company								

Australian Army Ordnance Corps (A. A. O. C.):
Armorer (corporal)

Total: Independent Company, including attached

Trade (Specialist) Group I:

Fitters (mechanics)
Instrument mechanics

Trade (Specialist) Group II:

Carpenters and joiners

Cooks

Electricians

Operators, Signals

Trade (Specialist) Group III:

Clerks

Nonspecialists:

Corporals

Batmen (strikers)

Drivers, M. T. (motor transport)

Orderlies

Pioneers

Privates

Signallers

Snipers

Total: rank and file

1	1	1	1	1	1	1	1	1	1	1
22	18	29	69	9	3	16	66	267		
	3	1	3					3		
			1					1		
	2		2					2		
3 2			2	1			1	5		
	3		3					3		
		10	10					10		
2			2					2		
1	1	1	3			2	6	21		
3			3	1	1		4	15		
2			2					2		
2			2	2	1		5	17		
	7		7					7		
						14	42	126		
		15	15					15		
				3			3	9		
12	16	27	55	7	2	16	61	238		

² Includes 6 lance sergeants, and 30 lance corporals.

³ Includes a corporal.

II—TRANSPORT

Motorcycles-----	4
Cars-----	1
Lorries (trucks) 30-cwt., G. S. (General service)-----	1

III—WEAPONS AND AMMUNITION

	Number	Ammunition— rounds		Total
		On man or with gun	Re- serve	
Pistols, Mauser ¹ -----	15	100		1, 500
Pistols, .455-inch ² -----	52	36		1, 872
Rifles, .303-inch-----	140	50	³ 14, 000	21, 000
L. M. G's., .303-inch (Bren) ⁴ -----	18	600	³ 12, 960	23, 760
Submachine guns ⁵ -----	36	400	7, 200	21, 600
Sniper rifles-----	9	50		504
Grenades, percussion ⁶ -----				

¹ For officers other than R. A. E. (Royal Aircraft Establishment), and Signals.

² For Nos. 1 and 2 of Bren guns, 2 officers R. A. E. and Signals and for enlisted signallers.

³ 20 percent tracer.

⁴ 2 per section.

⁵ 4 per section.

⁶ 2 per enlisted man (bakelite).

10. Standard Equipment.—The following list shows the standard equipment of independent companies.

EQUIPMENT TABLES

a. Poison-gas protective and decontaminating equipment, individual and organizational.

b. Apparatus, camouflage. Including a large quantity of garnishing burlap of various colors; nets and spiders.

c. Tool chests and supplies as follows:

Instruments, mechanic's	1	Paint, various colors
Instruments, electrician's	1	Cleaning and preserving preparations
Instruments, carpenter's	2	Solder
Motorcycle, artificer's	1	Plasticine, for demolitions
Armorers	1	Vaseline, for demolitions
Various sets of hand tools		Adhesive tape, for demolitions
Engineering tools		Cordage
		Spun yarn
		Twine

d. Portable cookers, complete.

e. Sleeping bags.

Special light tentage.

f. Medical equipment.

g. Demolition equipment, as follows:

Ammonal	pounds ..	400
Incendiary arrows		20
Bombs, incendiary		24
Magnesium flares		260
Borers, coal (for sabotage of coal supplies)		1
Antitank grenades		20
Percussion caps		50
Cordtex, commercial	feet ..	1,000
Detonators, No. 3		500
Detonators, electrical		100
Fuze, instantaneous	feet ..	600
Fuze, safety	do ..	500
Guncotton, dry primers		180
Guncotton, wet, slabs (or TNT)	pounds ..	200
Grenades, fragmentation		600
Igniters, fuze		100
Plastic high explosive	pounds ..	400
Signals, fog		27

Signals, relays-----	7
Sticky tank grenades-----	50
Switches, various, pull and pressure, for booby traps, etc-----	250
Strikers, antitank mines-----	10
Shrapnel mines-----	10
Tyesules (incendiary bombs) (for incendiary sabotage) -----	20
Time vibration switches-----	4
Antitank mine containers-----	10
Exploder, dynamo-----	1
h. Sketching equipment, drawing sets.	
i. Compass, binoculars, telescopes.	
j. Signalling:	
Visual sets: flags, lamps, and heliograph.	
Radio: 6 sets (2 light portable).	
k. Suits, camouflage:	
Blouses -----	50
Hoods -----	273
Trousers -----	50
l. Rubber-soled hunting boots for each man for patrols.	
m. Tailors' and cobblers' sets.	

Chapter 2

COMMANDO
TRAINING

	<i>Paragraphs</i>
<i>Section I</i> SPECIAL AND COMBINED TRAIN- ING	11-15
<i>Section II</i> MOUNTAIN TRAINING	16-21
<i>Section III</i> COMMANDO RATIONS	22-23

SECTION I

Special and Combined Training

11. General.—Volunteers who are accepted for the commandos now receive basic training in a 3 months' course at The Commando Depot. Formerly most of the commando training was conducted at the old Special Training Center, now known as The Advanced Infantry Assault School. The chief mission of this assault school is to develop shock troops for the Army as a whole, but a majority of the officers and noncommissioned officers of the commandos are sent there to take advanced training courses especially designed to qualify them as instructors. These special courses last from 2 weeks to 1 month. The Commando Depot and The Advanced Infantry Assault School are located in Scotland, where the combination of extremely rugged terrain with lakes and seacoast makes an ideal environment for amphibious training. Special courses for selected commando officers and noncommissioned officers are also available at the Combined Training Center, also in Scotland, where special stress is given to cooperation with naval units. In addition to these training centers the commandos have ample facilities for unit training at their home stations.

By the time a member of the commandos is ready for action, he can handle instinctively and confidently all the weapons and equipment assigned to

him. Even then, however, his training is not finished. Before any commando unit goes on a raid, it carefully rehearses every phase of that particular raid in a geographical setting that most nearly corresponds to the actual theater of operations.

12. Special Training.—The next three subsections will describe commando training methods at the old Special Training Center, as reported by a U. S. observer. Although the basic training has been transferred to The Commando Depot, the methods and principles remain practically the same.

Students were chosen on the basis of physical fitness and aptitude for enduring and absorbing the rigorous training that is required. Those who graduated with the recommendation of staff and medical officers were permitted to apply for membership in the commandos, and approximately 50 percent of the officers and the enlisted men were accepted after each training course. The remaining students were returned to their original organizations to conduct appropriate assault courses within their respective units. It was believed that this type of instruction would tend to improve the fighting ability of the British soldier in general.

The Special Training Center had a "Holding Wing" where officers and enlisted personnel were trained and held as replacements for existing units or as personnel for new commandos. An allied section of the Center was operated for the training of Polish, Free French, Czechoslovakian, and

Norwegian troops. Basic combined training with the Navy was carried out at a nearby naval establishment.

The Special Training Center was located in extremely rough terrain in the Scottish Highlands, on a lake connecting with the sea. The surrounding country is mountainous, reaching altitudes up to 4,000 feet, and the rainfall is the heaviest in the British Isles. In such terrain it was possible to conduct training that required the greatest physical exertion.

At this Center full recognition was given to the imperative need for physical efficiency in war. On many occasions students were exposed to conditions in which the noise, the extreme fatigue, and the mental strain of battle were simulated in a very realistic manner. Such training tested the relation between fatigue and mental efficiency, for students were required to consider and render tactical decisions when the going was seemingly unbearable.

Practical and theoretical instruction in map problems was stressed. French, German, and Russian, as well as English, maps were used. Students were taught to make hasty sketches, perspective drawings of shore lines, and overlays.

Day and night, practical map problems that required mountaineering and considerable physical exertion were worked out in the field. The average distance covered in these map problems was approximately 40 miles. The students had to contend with poor visibility, sleep in the rain, build fires with

wet fuel, cross swift mountain streams, and move rapidly over exceedingly difficult terrain. In the beginning some students unfamiliar with the terrain and training were lost in the Highlands for as many as 3 days.

The use of ground and cover was taught practically in progressive stages. At first the students were required to move toward given objectives over terrain affording good cover; and when they exposed themselves unnecessarily, this fact was brought to their attention. In the later training, the facilities for cover were much more limited. In the middle stages of this work, blank cartridges were fired from an Enfield rifle when a student exposed himself unnecessarily. In the final stage, ball cartridges from rifles and Bren guns were fired so that the bullets fell 3 to 5 feet from such a student. This method produced excellent results, compelling the men to take cover naturally and quickly.

Another phase of training involved the use of canvas assault boats and reconnaissance boats. Practice in the use of this equipment was conducted in swift streams as well as in the sea. This training was further developed in the form of opposed landings, usually made before dawn, the students being required to fight their way to objectives situated from a few hundred yards to several miles inland. These objectives were usually high up the side of a mountain. During the attack the men were subjected to very close fire from Bren guns and rifles as well as to the bursts of the Mills grenade, the bake-

lite grenade, and 2-inch-mortar smoke shells. This realistic instruction occasionally produced casualties. In one exercise one man lost an eye and another was cut severely in the leg by grenade splinters. On another occasion one man was killed. A combination of confusion and a strong desire to take cover quickly when under fire caused a number of sprained ankles and twisted knees. It was emphasized that these casualties were generally a result of carelessness.

Many hours were devoted to unarmed combat, involving ju jitsu, wrestling, and general brawling tactics. This training improved the individual's self-confidence and developed a keen desire to fight. Close combat proved highly interesting to both officers and noncommissioned officers. It was an excellent means of physical training, requiring the use of all the muscles and improving bodily coordination. The methods learned were actually employed in tank-hunting exercises and in taking fortified points.

A short course was given on the subject of tank hunting. Men were informed that determined individuals had been able to stalk and destroy tanks effectively in Africa, Norway, and Greece. Highly skilled stalkers are required, who must be aggressive to the point of recklessness.

In a typical problem at the Special Training Center, reconnaissance units located a park of dummy tanks before darkness. Although the park was guarded, the raiders were required to approach

the tanks and destroy them without being seen. Usually the results were highly successful. Many parties reached their objectives either without being seen or after having quietly removed the guards in their path. The exercise demonstrated that soft-soled shoes must be worn, that helmets and any equipment which rattles must be left behind, and that knife fighting is effective against sentries. Men were taught that methods of hunting tanks must be varied to meet widely different concrete situations, and common sense was stressed as the basic rule in these exercises.

Orthodox and unorthodox use of grenades and mines for demolitions was taught, including techniques for the bangalore torpedo and the construction of booby traps with grenades. Instruction was also given in the employment of demolitions and explosives in conjunction with ambushes. Several accounts of actual ambushes contrived by commandos were studied and discussed, and a number of ambushes were set up in practice for the instruction of students.

Another subject in the course was the negotiation of obstacles. This included the crossing of barbed-wire barriers set up in German fashion, the crossing of mine fields, and the passing of booby traps and of natural and man-made obstacles of other types. The bangalore torpedo was employed to blast a path through wire. Other methods of crossing, such as the use of logs, gunny sacks, and blankets placed over wire, were demonstrated. A lecturer suggested that

bodies of dead men might be employed effectively for bridging wire obstacles, and also that men wearing overcoats for protection against the wire could lie across entanglements so that other men could pass over them.

Two methods of crossing mine fields were taught. In one, students used bayonets to prod the ground until a mine was discovered. These were then dug out or exploded with guncotton. The other method was to use the cup projector in conjunction with an Enfield rifle and a Mills grenade. A 30-yard length of cordtex (explosive cord $\frac{1}{4}$ inch in diameter) was coiled with one end tied to the Mills grenade (detonator removed). The grenade was fired across the mine field, dragging the cordtex approximately 30 yards. The cordtex was then detonated, causing all mines in a path 8 inches wide to explode. Ten feet to one side a similar exercise was carried out. Two men followed the paths of the exploded cordtex, dragging a net of cordtex with an 8-inch mesh, 10 feet wide, across the mine field. When the net was detonated, a 10-foot path was cleared. In a practice crossing in which a U. S. observer participated, every mine within the 10-foot path was exploded. The mines were the British Mark IV antitank mines.

13. Instructor Training Courses.—Courses of approximately 2 weeks' duration in even more highly specialized phases of this training were conducted for officers and senior noncommissioned officers who were selected to act as instructors for their units. The courses included the Close Combat Instructors'

Course, the Fieldcraft Course, and the Instructors' Course in Demolitions. Schedules of the courses follow:

CLOSE COMBAT INSTRUCTORS' COURSE

<i>Subject</i>	<i>Periods (55 minutes each)</i>	<i>Subject</i>	<i>Periods (55 minutes each)</i>
Lectures:		Practical Exercises—	
Introductory -----	1	Continued.	
First aid in the field-----	1	Bren firing from hip	
Street fighting-----	1	and shoulder -----	1
Ambushes -----	1	Use of scaling lad-	
Characteristics of		ders -----	1
small arms-----	1	Obstacle assault	
Demonstrations:		course-----	3
Cover and camou-		Individual and sec-	
flage -----	1	tion stalk-----	6
Sharpshooting-----	1	Wood stalking-----	2
Ambushes-----	1	Boxing -----	1
Characteristics of		Field firing-----	2
small arms-----	1	Wood fighting-----	1
Practical Exercises:		Opposed landing-----	1
Physical training ---	10	Scheme (tactical ex-	
Unarmed combat-----	14	ercise)-----	7
Saber fencing -----	8	Miscellaneous:	
Grenade throwing --	4	Issue and return of	
Bayonet fighting ---	2	equipment-----	2
Automatic pistol,		Discussion-----	1
handling, strip-		Pistol firing*-----	2
ping, and cleaning-	2	Thompson subma-	
Thompson subma-		chine gun firing*--	2
chine gun; han-		Free -----	11
dling, stripping,			
and cleaning-----	2	Total -----	95
Rifle firing from hip-	1		

* Coincident with other periods.

Comment:

Normally the last 6 of the 14 periods on unarmed combat were utilized to test the ability of the candidates as instructors.

Saber fencing was included in order to develop good footwork and balance, quick mental reactions, and parries and attacks suitable for knife fighting.

Grenade instruction included every possible type of throw with dummy grenades, and the throwing of at least four live grenades per man.

Full instruction was given in handling, stripping, cleaning, and firing the .45 Colt automatic pistol and the Thompson submachine gun.

The obstacle assault course included all types of obstacles likely to be met in the field. This course was negotiated in battle order and included field firing with ball ammunition.

The wood-fighting periods were designed to encourage quick reaction in the face of unexpected targets in close country. Students were taken over this course individually and ball ammunition was used.

In the opposed-landing periods, students fired ball ammunition, and realism was added by firing more ball ammunition over their heads and by the use of anti-personnel grenades and smoke.

FIELDRAFT COURSE

SUBJECT

	<i>Periods (55 minutes each)</i>		<i>Periods (55 minutes each)</i>
Lectures:		Demonstrations—(Con.)	
Introductory -----	1	Mess-tin cooking-----	2
Mountaincraft-----	1	Characteristics of	
Woodcraft -----	1	small arms-----	1
Map reading -----	4	Practical Exercises:	
Food values-----	2	Map reading-----	15
Maintaining direc-		Use of telescope-----	1
tion -----	1	Stalking -----	6
Panoramic drawing-	1	Construction of	
Mess-tin cooking----	1	bivouacs -----	3
Characteristics of		Bridging-----	3
small arms-----	1	Schemes (tactical ex-	
German army identi-		ercises) -----	28
fications-----	1	Miscellaneous:	
Physical efficiency in		Issue and return of	
war-----	1	kit (equipment)--	2
Demonstrations:		Discussions-----	3
Woodcraft -----	1	Free-----	10
Cover and camou-			
flage-----	1	Total -----	91

Comment:

The first 2-day exercise was in mountainous country; the second in closely wooded country.

Saturday was the only day on which the students could get to the nearest town; hence this was a free day and Sunday was a work day.

The practical map-reading periods included the following subjects:

Route finding	Panoramic drawing
Keeping direction with and without map and compass	Field sketching
Long-range observation	Visualization of ground from map

The periods on stalking were intended to teach use of ground and cover, silent and unobserved movement, and the ability to find the way to an objective which is visible only from a distance.

The periods on bridging dealt with a method of constructing a quick and serviceable bridge over an obstacle without calling on the engineers.

INSTRUCTOR'S COURSE IN DEMOLITIONS

Syllabus:

Theory of explosives.
Calculating and placing
of small charges.
Firing initiating charges.
Explosives and their
storage.
The main charge.
Detonating fuzes.
Placing charges.
Ring mains and junction
boxes; firing large
charges.
Placing dummy charges.
Bore-hole charges.
Bombs and incendiaries.
Offensive and defensive
demolitions.
Raids.
Preparation for raids.
Technical appreciation.
Electrical circuits.

Appreciation for night
schemes (tactical exer-
cises).
Placing and firing
charges, practical.
Destruction and sabotage
of railways.
Destruction of machin-
ery, boilers, lock gates,
etc.
Destruction of petrol and
oils.
Driving trains, practical.
Night operation involv-
ing demolition (in con-
junction with other
courses).
Training in units; dis-
cussion.
Examination.

14. Comments by a U. S. Observer.—Small tactical exercises were conducted during the course in order to give the students practical work in the subjects

covered. The individual's ability to participate in offensive operations, after enduring hardships and forced marches through strange country at night, was tested in exercises of 1 to 3 days' duration. But even when he had reached his objective, he was not allowed to rest, for then he had to practice a rapid withdrawal. These operations usually involved demolitions or sabotage of vital points and utilities; they were often carried out in conjunction with small landing operations in which naval forces participated.

The men were taught to live on concentrated rations during these exercises, to take care of themselves in the field under all conditions of weather and climate, and to maintain themselves in a "fighting condition."

Each man wore battle dress, carried his own arms, and kept all his rations and ammunition in his rucksack. Every effort was made to keep the weight of the load down to a minimum; the pack usually averaged about 35 pounds. As one instructor expressed it: "I tell them the job to be done; the number of days we will be out; the arms and ammunition required; and leave to the individual to decide what he will carry for his own personal comfort. As each man carries his own load, only the bare necessities are taken along."

Two former sergeants of the Shanghai police force, commissioned as captains in the British Army, gave the instruction in unarmed combat, the use of the fighting knife, and self-defense.

The fighting knife was developed at the school as a weapon to be carried by all members of a raiding party, and was carried in the side pocket of the trousers of the battle dress.

Instruction was given in firing single shots from the submachine gun while it was set for full automatic operation; this was to conserve ammunition and yet have the gun immediately ready for full automatic fire if necessary.

All instructors were carefully chosen and were well qualified in their respective subjects.

Considerable time was spent in teaching students to fire the rifle and Bren gun from the hip.

A very difficult pistol course was arranged which required the student to fire from various angles at unexpected targets.

Every effort was made to develop the offensive spirit in all students, and to teach them to defend themselves against the type of tactics emphasized in their own special training.

The commando personnel appeared to be in excellent fighting trim, and capable of giving a good account of themselves under any conditions.

15. Combined Training.—a. Advanced combined training.—The following is a sample schedule of the advanced combined training which the commandos practice:

	<i>Periods</i> ¹	
	<i>Day</i>	<i>Night</i>
Boatwork	1	1
Embarking and disembarking from boats for both beach and rock landings; loading of craft.		

¹ Each period is 55 minutes.

	<i>Periods</i>	
	<i>Day</i>	<i>Night</i>
Battle Patrol Formations-----	1	
Suitable formations for raiding parties by day and night.		
Landing Exercises-----	2	1
Simple company exercises involving a landing, a formation of beachhead party, and limited move to objective. The second exercise was preparation for night-landing training.		
Seamanship -----	2½	
Pulling cutters and dinghys; bends and hitches; embarking and disembarking from drifters at sea; compass work; rope ladder climbing.		
Assault -----	2½	
Firing from boats; crossing and clearing obstacles; firing from hip; use of grenades; close combat.		
Daylight Raids-----	2	
Company exercises in raids by day; elaborating and extending the scope of earlier landing exercises.		
Night Raids-----		1
Exercises involving landing in darkness with objective some distance from beach; object of raid to be achieved and troops withdrawn to boats in darkness.		
Field Firing—Preparation-----	1	
Field Firing—Exercise-----	1	
Each company to prepare exercise on field-firing range and subsequently carry it out with ball ammunition; preparation by day, but exercise to		

involve landing before dawn to secure beachhead, and offensive after first light; mortars to be in support of company on at least one occasion during course.

Discussion----- 1

On return from field-firing exercise; other discussions and lectures to be arranged by group staffs.

Demonstration----- 2

By Royal Engineers—to include demolitions, bangalore torpedoes, and booby traps.

Battle Exercise----- 2 2

Commanded by battalion commander. Probable hours 0500 to 2100, which will involve landing and disembarking in darkness.

Spare Time----- 6

24 5=12 days.

b. Ships and landing craft.—The type of ship assigned to the commandos for training and operations is officially designated as an infantry assault ship. In such a vessel the commando troops, six assault landing craft, or the same number of support landing craft, and two motor landing craft are carried from a home port to the waters of a place that is to be raided. There the mother ship launches the assault, support, and motor landing craft. The infantry assault ship displaces about 3,000 tons, and has a speed of 23½ knots and a cruising range of approximately 12,000 miles at 13 knots.

The characteristics of assault and motor landing craft are as follows:

Type	Draught	Speed in knots	Length	Beam	Open- ing	Load	Remarks
Assault land- ing craft (A. L. C.).	1 ft. 7 in. loaded.	10½ loaded.	38 ft. 9 in.	10 ft.	4 ft. 5 in.	35 men plus naval crew of 5 men or a subsec. 3.7 lt. (how.) btry.	Armored against small-arms ammunition. Rate of dis- charge one platoon 9 sec. Weight: loaded, 10½ tons; unloaded, 7½ tons. Range: 70 miles. Low silhouette. Silent engine.
Support land- ing craft (S. L. C.). (Same as assault land- ing craft, except for armament.)	1 ft. 7 in. loaded.	10½ loaded.	38 ft. 9 in.	10 ft.	4 ft. 5 in.	Manned entirely by naval personnel.	Special armament for giving close support; usually equipped with one mortar, which can fire smoke bombs designed to burst on water or on land, and two duel-purpose antiair- craft and ground machine guns.

Motor land- ing craft (M. L. C.).	1 ft. 6 in. forward, 4 ft. aft, loaded.	7½ loaded.	40 ft.	13 ft. 6 in.	-----	2 small vehicles, i. e., 15- cwt. trucks or Bren gun carriers, and 40 men; or 1 large vehicle, i. e., 3-ton lorry (truck) and 40 men; or 1 tank not exceeding 16 tons, and 100 men.	If loaded with small ve- hicles, the M. L. C. can be lowered complete. If loaded with large vehicle, the M. L. C. must be lowered first and the ve- hicle lowered into her when she is afloat. Weight: 18 tons.
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No time schedule covering the foregoing training is available, but the following is a topical list of the subjects covered:

- a. Offensive demolitions.
- b. Close combat, comprising:
 - Unarmed combat;
 - Pistol;
 - Thompson submachine gun;
 - Grenade;
 - Bren firing from hip and shoulder;
 - Rifle firing from hip;
 - Use of the fighting knife;
 - Bayonet fighting;
 - Stalking;
 - Fighting in closely wooded country;
 - Street fighting and house clearance.
- c. Assault, comprising:
 - Assault course;
 - Opposed landings;
- Field firings;
- Surmounting obstacles;
- Destruction of antitank mines;
- Elementary bridging;
- Use of assault boats;
- Use of scaling ladders.
- d. Tactical schemes (exercises) involving:
 - Endurance;
 - Living on concentrated rations;
 - Subordinate leadership;
 - Automatic battle drill;
 - Ambushes;
 - Night operations;
 - Road blocks;
 - Fieldcraft;
 - Quick reactions;
 - Necessity for rapid decisions.

SECTION II

Mountain Training

16. General.—Anticipating the probability of fighting in theaters of war that have mountainous terrain, the commandos have made a study of the principles and technique of mountain training. This discussion summarizes the observations of a British commando officer who has had recent experience in irregular mountain warfare.

In training for this type of fighting, the commandos are guided by three simple but fundamental principles:

- a. Acquire a knowledge of certain elementary facts drawn from the experience of those who have spent much of their time in the mountains;
- b. Give considerable time to the practice of mountain-craft;
- c. Cultivate the right state of mind toward the rigors of mountain operations.

It is important to start mountain training gradually, especially with older men. The pace should not be hurried, especially at the beginning of the day. Planning a route is important. A commando soldier should be able, after looking at a range of hills and consulting a map, to select the easiest route over them. Valleys are likely to be marshy and full of vegetation which would slow up a march. Ridges are uneven and rocky, and climbing them usually involves considerable exertion because of the numerous dips and

rises in such a terrain feature. When possible it is best to follow a zigzag route over the easiest available ground.

A long, unhurried step is best for mountainous country, and in marching on slopes the heels should not be kept off the ground. It is much less exhausting to put the whole foot on the ground with each step, and with practice even steep slopes can be climbed in this manner. In a descent the route should be chosen if possible over short grass. Short paces are best on steep slopes, the heels being dug in solidly.

Steep rocks should be avoided by the inexperienced, although all rocks look steep at a distance, and much depends on the nature of the rocks. In crossing torrential waters it is a great help to hold hands and thus form a chain for mutual self-support. The soldier must never relax his self-control. There is nothing more dangerous or exhausting in mountain marches than to lose full control of the body, whether in rushing and slipping downhill or in jumping over a stream. Loss of control strains the muscles and destroys march rhythm.

Rhythm and deep breathing are the secrets of easy climbing. A steady, even pace and deep breathing should be correlated. Efficiency in this is obtained only by filling the lungs to the maximum extent possible. This must be done consciously at first; for instance, breathing in for three steps and breathing out for the next three. Later, deep breathing becomes automatic.

As the state of mind is all important, it is essential not to let the men become discouraged. If a man knows that others have marched 30 miles over mountainous country with heavy loads, and that he is fit and properly equipped, he will feel that he is able to do it, too. The men should camp out several days at a time, using different types of equipment, and living on concentrated rations. This will give them confidence. Gradually, as they get physically conditioned, they will think nothing of doing 30 miles a day in mountainous country with 40-pound packs. The officer or noncommissioned officer in charge should carry as much as or more than the men. The men should walk in single file as a general rule, following the route chosen by the leader. Thus a tired man is less likely to lag. It is good practice to let each man lead in turn, in order to introduce variety and to share responsibility. When men are tired, it is best to promise them rest at a definite time or place, for nothing is more exasperating than to march interminably onwards at the will of somebody else.

17. Food.—Food should be eaten frequently, especially if the troops are young men and the operations are not too strenuous. Great care should be taken to share all food with the utmost equality, and hoarding of rations should be discouraged. The men must be taught what fruits, plants, mushrooms, etc., are edible so that they can supplement their rations or live off the country. They should know how to milk a cow, how to clean and prepare car-

casses of animals, birds or fish, and how to catch game by all possible means—traps, snares, dead-falls, etc. It is not harmful to drink as much as a glassful of water each hour, but it is good discipline not to drink en route; many persons find it makes them more thirsty to do so, and in tropical countries such a habit would be fatal.

18. Clothing.—It is best to wear as little clothing as possible when actually climbing and to put on more clothes at halts; otherwise the troops will suffer chills when their perspiration evaporates. Clothes should be as loose as possible, especially around the neck and legs. Suspenders are better than a belt, for they allow free circulation of air and free use of the abdominal muscles.

Even temperature is maintained by warm air held between successive layers of thin garments, and thin clothes are easier to carry and to dry. Over all should be worn a light, windproof garment to imprison this warm air. Thin underclothes, a flannel shirt and trousers, a fine wool jersey (and another in reserve), and a suit of closely-woven cloth should be adequate protection in any weather. The jacket should have a hood with a sliding cord round the face. If waterproof garments are worn, the sweat cannot escape and the inner clothes get soaked. The Balaclava wool helmet is far too hot except in the Artic. A cap-comforter or wool band covering the ears is all that is needed beneath the hood. Battle dress is too hot for mountain climbing. Denim bat-

tle dress, being light and slightly windproof, is far better, but a loose-fitting blouse with a hood should be designed for irregular troops if they are expected to operate during the winter months in eastern Europe or Scandinavia.

For the hands, mittens with all the fingers in one compartment, or with the trigger finger separate, are best. A thin windproof outer glove should be worn over the mitten if necessary. Mittens and ordinary gloves are apt to constrict the circulation at the base of the fingers. There is a type of mitten in which the part over the fingers can be folded or buttoned back.

19. Footgear.—Ordinary Army shoes are not suitable for mountain operations. For general use in mountain terrain the British have found their “Boots, Army, Special” more useful. These shoes are without toe-caps and are built on a wide last, slightly raised at the toe and over the instep. Another type of shoe regarded as excellent is the “hunter’s boot”, which is built on a sprung last that allows for the natural curve of the foot when walking, and obviates the danger of getting blisters from the fold which forms behind the toe-cap. It is heavily nailed, the nails at the toe being driven through a zinc plate.

Since all nailed boots make a great deal of noise on rocks and pavements, particularly at night, rubber-soled shoes are essential for irregular troops. The best of this type, the British believe, is the Maine or Logan hunting boot, which is extensively worn in the

United States and Canada. Ankle or knee high, this boot has a heavily studded rubber sole and upper, the rest of it being made of soft waterproof leather. This footgear is absolutely silent and waterproof, does not slip on rocks or roads, and does not draw the foot, as do shoes with gum-rubber soles.

The British recommend two types of nails for mountain footgear: clinkers, large nails which are used around the edges of soles and which, being made of soft steel, are cut into by rocky ground; and tricunis, smaller, toothed nails of very hard metal, which bite into the rock. These two kinds last much longer than ordinary hobnails. A metal horseshoe on the heel will last a long time, but does not furnish a good grip, and makes it necessary to have nails in the center of the heel.

Shoes should not be oiled or greased daily, or they will become too soft and will not let out perspiration. The sole and welt may be greased more frequently, but the uppers should be greased only once a week. When wet, shoes and boots should be stuffed with bran or newspaper and slowly dried.

When the feet are soft they should be protected by plenty of socks and by an insole if there is room for one. Thick ski socks are good but they dry slowly. Feet can be hardened by the frequent application of alcohol; old soldiers lubricate the feet and socks with soap. Two laces may be used on each shoe or boot to prevent the outer sock from slipping down and forming an irritating ridge. The lower lace may be tied really tight while the

upper one is kept loose in the upper two or three holes. This is important in cold weather, for any obstruction above the ankles is liable to impede circulation and cause frostbitten toes.

20. Packs.—In mountains, if ponies and mules are not available, troops must carry their own gear, and for this purpose ordinary web equipment is not suitable, for it constricts circulation, breathing, and muscles, and destroys balance and comfort. The rucksack, with its loose construction, is practicable for loads up to 20 pounds, but for more than 20 pounds a rucksack or pack with a frame is essential. Any bag without a frame is very tiring on the shoulders.

Awkward loads, such as Bren guns and ammunition boxes, should be carried on Everest carriers,¹ whose frames leave the chest and arms free, do not interfere with balance, and can be adjusted to carry the weight in the right place. Another advantage is that they do not show a definite outline to the enemy. With such carriers, loads of 60 to 80 pounds can easily be carried with practice. For heavier loads a tumpline, or sling that passes from the load up to and around the forehead, should be employed to take up part of the weight. Once the neck muscles have been developed—in about 2 or 3 weeks—loads of 80 to 150 pounds can be carried with ease.

A British officer who has fought in mountainous terrain believes that a new type of military ruck-

¹ Pack carriers with rigid frames.

sack, with aluminum or wickerwork frame, should be designed to carry everything an irregular soldier needs.

21. Mountain Tents and Bedding.—A mountain tent should be light and weatherproof, and easy to carry, camouflage, and erect. A British commercial type that meets these requirements is described here.

The tent holds four men easily and six may crowd into it if necessary. It is 8 by 7 feet, with a projecting flap at the bottom, 9 inches wide, on which rocks or sod can be piled. The wall is 15 inches high, protected by an overhanging eave 4 inches wide. The height of the tent is 4 feet. It is supported by two jointed bamboo poles. There is a ventilator with a loophole at one end and a double fastening at the other. The inside of the apex is fitted with a tape for drying clothes, and ample tape is sewed on the outside for the purpose of attaching camouflage. The whole tent weighs 8 pounds and fits into a small bag 2 feet 2 inches long and 4 inches in diameter.

A light down sleeping bag, weighing not more than 6 pounds, is recommended. If only blankets are available, they should be formed into a bag. Mattresses should not be carried.

SECTION III.

Commando Rations

22. General.—A special ration, designed to give a man enough sustenance to enable him to operate under rigorous conditions, was developed at the Advanced Infantry Assault School by an officer who had had considerable experience in mountain operations in all climates. The ration was simple and light in weight; it was designed for individual cooking, and was easily handled in the field. A U. S. observer subsisted on this ration and reported that it proved to be sufficient for the period for which it was designed and that it was reasonably palatable.

23. Typical Ration.—A typical ration follows:

Daily Requirements:

Pemmican (dried meat, 60% lean, 40% fat) _____	ounces__	3
Chocolate_____	do____	3
Oatmeal _____	do____	5
Biscuit _____	do____	6
Dried fruit _____	do____	5
Margarine or butter_____	do____	1½
Tea or coffee (compressed)_____	do____	¼
Salt _____	do____	¼
Sugar (lump)_____	do____	1½
Total weight _____	do____	25½

Diet Sheet:

Breakfast:

Oatmeal _____	do____	3
Biscuit _____	do____	2

Diet Sheet—Continued.

Breakfast—Continued.

Dried fruit	ounces	1
Margarine	do	1½
Tea	pint	1

Midday Meal:

Oatmeal	ounces	1
Biscuit	do	2
Chocolate	do	2
Dried fruit	do	2

Evening Meal:

Oatmeal	do	1
Biscuit	do	2
Pemmican	do	3
Dried fruit	do	2
Chocolate	do	1
Margarine or butter	do	1
Tea or coffee	pint	1

Rations were carried in their packs by the soldiers. Food was prepared in mess tins, individually.

The soldiers were encouraged to use dandelion shoots, grass nettles, and other herbs in conjunction with pemmican and oatmeal for making a stew. These herbs in the stew contributed vitamin C. While the standard Army ration was used during the training, the concentrated ration was substituted during tactical operations because of its small bulk and light weight. It was impressed on the students that the ration was sufficient to maintain them in satisfactory physical condition during these short operations, and to enable them to perform their assigned tasks without undue hunger and fatigue.

Chapter 3

Commando
Operations

	<i>Paragraphs</i>
<i>Section I</i> VAAGSO (NORWAY) RAID . . .	24-27
<i>Section II</i> BRITISH TASK FORCE, SPITSBERGEN OPERATION	28-39

SECTION I

Vaagso (Norway) Raid

24. General.—The following report of the British raid against Vaagso, Norway (see Map No. 1), on December 27, 1941, was made by the naval and military commanders of the naval force and commandos which carried out the operation. Important paragraphs and appendices of the report, dealing chiefly with signal communications and certain naval operations, have been omitted for reasons of security. Commanders of higher units in the field who may desire to make a more exhaustive study of the Vaagso operation should apply for the omitted material to the Chief, Military Intelligence Service, War Department, Washington, D. C.

Asterisks have been used in some instances to conceal British place names and names of individuals, and other minor editorial revisions have been made. Also for reasons of security, the following system of letters and numerals has been used instead of ships' names, unit designations, and British airfields:

<i>Ships</i>	<i>Commandos</i>	<i>Commando troops</i>	<i>Airfields</i>
Destroyer—A	(B)	(CA)	(D)
Destroyer—B	(BA)	(CB)	(DA)
Destroyer—C	(BB)	(CC)	(DB)
Destroyer—D	(BC)	(CD)	
Infantry As-		(CE)	
sault Ship—1			
Infantry As-			
sault Ship—2			

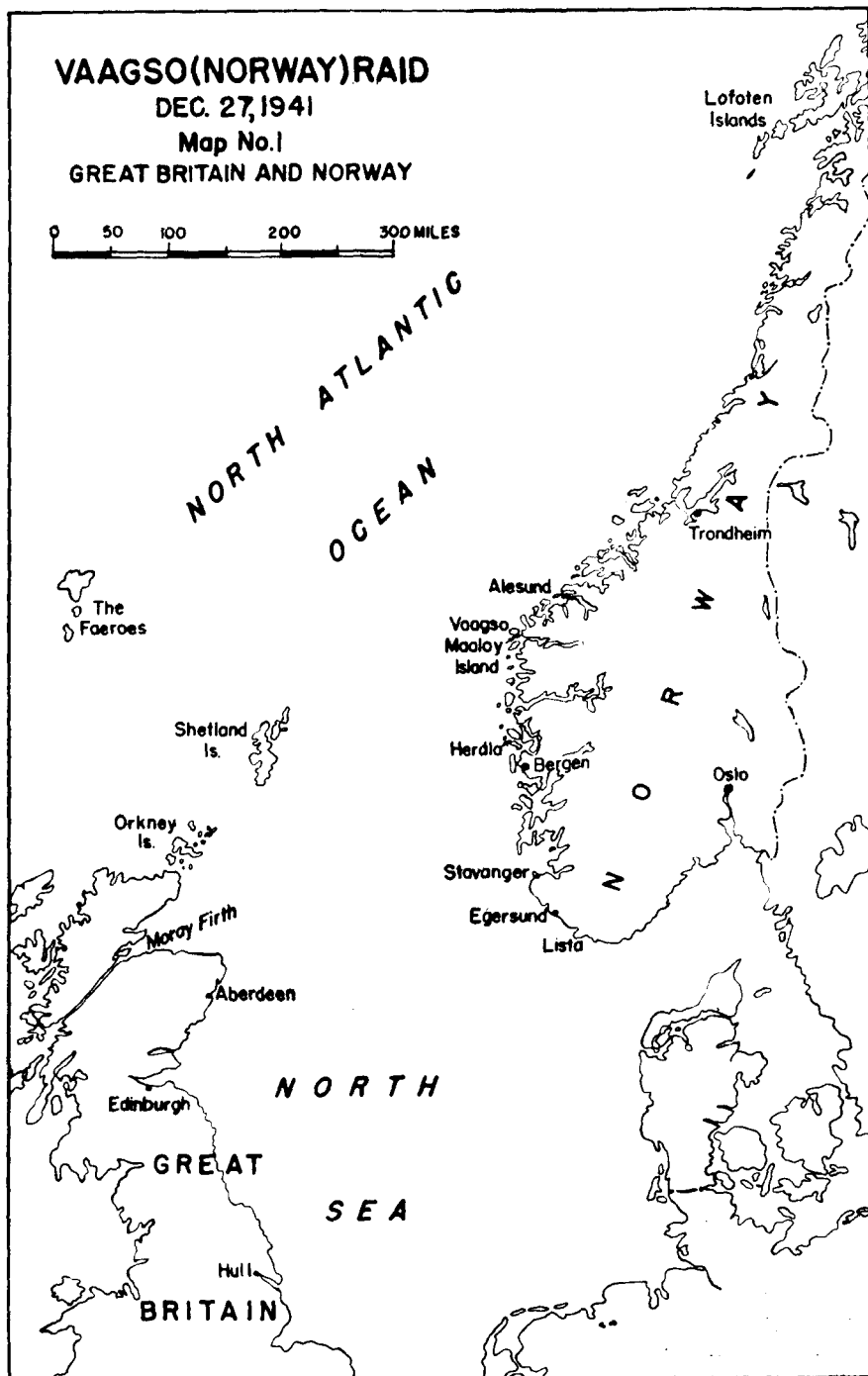
VAAGSO(NORWAY)RAID

DEC. 27, 1941

Map No.1

GREAT BRITAIN AND NORWAY

0 50 100 200 300 MILES



25. Report of Naval and Military Commanders Who Carried Out the Vaagso Raid:

REPORT ON OPERATION * * *

From . . THE NAVAL AND MILITARY COMMANDERS, OPERA-
TION * * *¹

Date . . 2d January 1942

No. * * *

To . . THE COMMANDER-IN-CHIEF, HOME FLEET.

(Copy to:—

Commodore, Combined Operations.)

1. The following report, by the Naval and Military Commanders, on Operation * * *¹, which was carried out on Saturday, 27th December 1941, is forwarded herewith.

2. The intention of Operation * * *¹ was to carry out a raid on military and economic objectives in the vicinity of Vaagso Island with the object of harassing the coastal defenses of southwest Norway and diverting the attention of the enemy Naval and Air Forces from another operation.

PLANNING

3. The Naval and Military Commanders were appointed on 6th December 1941, which gave three weeks to plan and rehearse the operation. This is considered to be the absolute minimum time required. At least two full rehearsals should take place to allow timing and communications to be perfected. Weather conditions frequently make rehearsals impossible for days on end and this must be allowed for in the program.

4. After the preliminary meeting between the Force Commanders and the Air Advisor to the Commodore, Combined Operations, the plan was drawn up in London. It is strongly recommended that this procedure be followed in the future, as the London facilities for obtaining the latest intelligence and information of all kinds are so much better than those elsewhere.

¹ Secret code name used here.

COMPOSITION OF THE "FORCE"

5. (a) *Naval.*

H. M. S. * * * (heavy cruiser) (Rear Admiral Commanding * * * Cruiser Squadron—Naval Commander).

H. M. S. * * * (Destroyer A) (Captain (D), * * * Flotilla).

H. M. S. * * * (Destroyer B).

H. M. S. * * * (Destroyer C).

H. M. S. * * * (Destroyer D).

H. M. S. * * * (Infantry Assault Ship 1).

H. M. S. * * * (Infantry Assault Ship 2).

(b) *Military.*

Operational Headquarters, Special Service Brigade.

Detachment of the Special Service Brigade Signal Section.

All ranks of No. (B) Commando.

Two troops (less one Section) of No. (BA) Commando.

An R. A. M. C.² detachment from No. (BB) Commando.

An R. E.³ detachment from No. (BC) Commando.

Troops of the Royal Norwegian Army.

Officers from the War Office (M. I. 9).⁴

A Press Unit of correspondents and photographers.

TOTAL Military Personnel: 51 Officers, 525 Other Ranks.

(c) *Air Force.*

Ten Hampdens of * * * Squadron (for smoke laying and bombing).

Blenheims (Fighter).

Beaufighters (Protection).

18 Blenheims of Bomber Command (for bombing diversion.

² Royal Army Medical Corps.

³ Royal Engineers.

⁴ That branch of Military Intelligence dealing with prisoners of war.

REHEARSAL

6. The Naval Force, with the exception of Destroyers A and D, assembled at a British naval base by 15th December, when embarkation of the Military was completed.

7. It was immediately arranged for Naval, Military, and Air Force Officers concerned to attend a conference on the cruiser to discuss the first rehearsal, known as Exercise "L" in order to counteract speculation.

8. Exercise "L" was carried out at dawn 17th December, when a landing was made under cover of a dummy bombardment and smoke laid by Hampden aircraft, on a small island of similar size to Maaloy Island, one of our final objectives. Much valuable experience was gained but communications could not be thoroughly exercised, as various equipment and personnel had not arrived in time.

9. On completion of Exercise "L" a conference was held on the cruiser to discuss the lessons learned. As a result of this meeting the Plan was revised and it was decided to carry out a final rehearsal—Exercise "L.2"—on 22nd December, when the revised plan and all communications could be thoroughly tested and exercised.

10. During the intervening period, the cruiser carried out a practice bombardment of a town with Hampden aircraft cooperating. This was a most valuable exercise.

11. Unfortunately, the weather prevented Exercise "L.2" being carried out in full but the cruiser and Hampden aircraft were able to complete their part of the final rehearsal. Other arrangements were made to test and exercise communications.

12. * * *

13. A final conference was held on the cruiser on this date, when outstanding points were settled. By this time, as a result of the conferences and rehearsals held, all concerned were familiar with the plan and general intentions down to the smallest detail.

14. The "Force" proceeded from a British naval base at 2115/24th December, arriving at another British port at

1330/25th December. Heavy weather was encountered on passage, and on arrival the assault ships discovered and reported various defects, including forward compartments flooded to a depth of about 14 feet.

15. The Naval and Military Commanders visited both ships. Pumps and equipment to carry out repairs were sent over from the cruiser, and a destroyer put alongside to assist in the pumping.

16. In order to make the assault ships as seaworthy as possible, and in view of the latest meteorological reports, it was decided at 1615 to postpone the operation for 24 hours.

17. All ships had been fully supplied with fuel and all repairs had been completed by 1400/26th December. The weather forecast was far more promising, and it was therefore decided to sail the "Force" at 1600 that day to carry out the operation at dawn 27th December 1941.

THE NAVAL APPROACH

18. The passage across the North Sea commenced in bad weather. The Destroyers formed an A/S⁵ screen until moonset, after which the "Force" proceeded in single line ahead, in this order:

The cruiser, Destroyer D, the two assault ships, Destroyers A, C, and B.

19. As anticipated, the weather rapidly improved as the "Force" proceeded to the eastward, and conditions were perfect on arrival off the Norwegian coast.

20. On making landfall it was found that our position was exactly as estimated and great credit is due for the skillful navigation of the cruiser.

21. * * *

22. * * *

23. The "Force" entered Vaagso Fiord (see Map No. 2) on time apparently unobserved and it seems possible that the lookout post at the lighthouse was not manned. The cruiser

⁵ Antisubmarine.

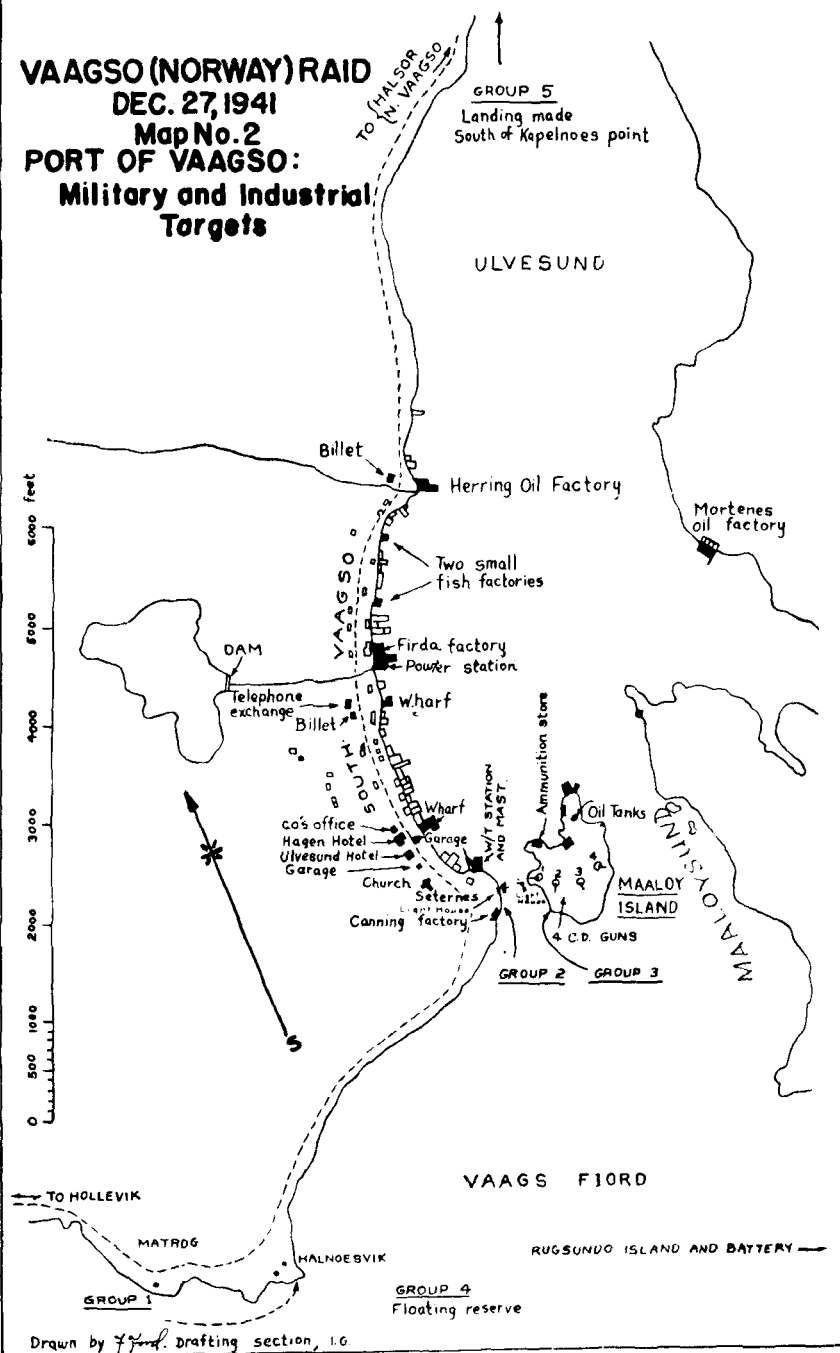
VAAGSO (NORWAY) RAID

DEC. 27, 1941

Map No. 2

PORT OF VAAGSO:

Military and Industrial
Targets



Drawn by *[Signature]* Drafting section, I.G.

moved over to the southern side of the Fiord while Destroyer D led the assault ships to the bay south of Hollevik as planned. Destroyer A closed on the cruiser's starboard quarter and Destroyer C closed astern the cruiser. Destroyer B remained near the entrance of the Fiord to cover the "Force" from the west.

THE BOMBARDMENT

24. Hampden aircraft timed their arrival in the area perfectly, keeping all the attention well "up" Fiord and drawing the fire of four or five light A. A. guns.

25. At 0842 Assault Ship 1 made the signal indicating that assault landing craft were formed up and moving ahead. The cruiser was moving ahead slowly, and at 0848, just before the line of fire opened, star shells were fired to burst over Maaloy Island when, half a minute later, the line of fire opened and the bombardment commenced.

26. Destroyer A drew ahead on the cruiser's disengaged side and joined in the bombardment when clear of the cruiser. Destroyer C, astern of the cruiser, also joined in the bombardment as her line of fire opened. The shooting of all three ships was of very high order.

27. The battery at Rugsundo, which had already been bombed by Hampden aircraft, opened fire on the cruiser at 0856. It was erratic and the rate of fire was low, but nevertheless it proved a great nuisance throughout our stay. The guns were thought to be smaller than 5.1-inch and were more probably about 4.7-inch. On bursting, the shell gave off a purple smoke, suggesting French origin.

28. At 0857 $\frac{3}{4}$ the "cease bombardment" signal was made by the Military in the assault landing craft now rapidly approaching their objectives. The naval bombardment of Maaloy Island thus came to an end and from reports received from the Military who landed on the Island, there is no doubt whatsoever that it had been completely successful.

29. At 0858 the cruiser, having changed over to full

charges, opened fire on Rugsundo. After 21½ minutes the enemy guns were silenced. The smoke bombs, dropped by the Hampdens near Rugsundo, were by now effective and gave cover to our ships in the Fiord.

30. At 0858½ seven Hampden aircraft, showing great skill and dash, came in at very low altitudes to drop their smoke bombs. These were placed with great precision on Maaloy Island, and as a result the landing there was unopposed. The bombs were dropped on a front of approximately 250 yards, and, as there was practically no wind, gave a screen of ideal density in which visibility was some 15–20 yards.

31. The smoke bombs dropped at the landing place in South Vaagso were only 50 yards out of the desired position, but one of them most unfortunately struck a landing craft, setting it afire and causing some 20 casualties from burns.

32. Despite this serious accident it is considered that these bombs were of great value, for they enabled the troops to be put ashore with few casualties from the automatic weapons which were bringing fire to bear on the landing place and which might have inflicted even heavier losses had they been given a clear and unimpeded view of their targets.

33. It must here be noted that the aircraft which dropped the bombs at South Vaagso appeared to be on fire and not properly under control. It was almost certainly the Hampden bomber which later fell into the sea near the entrance to Vaagsfiord. If this was so, then the degree of accuracy achieved in placing of the bombs must have been the result of a very gallant attempt on the part of the crew of the aircraft to carry out in full their allotted tasks. Assault Ship 1 proceeded to the rescue, but unfortunately only one of the three members of the crew picked up survived.

34. One Hampden bomber which overshot the target attacked and silenced positions in the area with machine-gun fire.

35. It is regretted that one other Hampden failed to return from this operation.

36. Of the three Hampden bombers detailed to attack the Rugsundo battery, one had to return with engine trouble, but the other two carried out an attack, the results of which could not be observed from the cruiser but which were apparently very successful.

MILITARY OPERATIONS

37. For the purpose of the operation, the military forces set out in paragraph 5 (b) were organized into the Operational Headquarters which remained throughout in the Flagship,⁶ with the Brigade Commander in close touch with the Naval Commander on the bridge, and the troops were put ashore in assault landing craft from the cruiser, the assault ships, and in ship's boats from Destroyer B.

The Forces ashore were divided into five groups for purposes which will become clear in the course of this report.

38. The detailed subdivision of the Military Force is set out in Appendix "A", the positioning within the Flagship of the Military Operational Headquarters is shown in Appendix "B", and the system of Naval, Military, and R.A.F. communications is described in Appendix "C".⁷

General Tasks of Each Group (see Map No. 2).

39. The purpose of Group 1 was to land near Hollevik and clear the Halnoesvik area where a German gun had been reported. Having accomplished this task, Group 1 was to move along the coastal road to South Vaagso and form a reserve for Group 2 unless given other orders.

Group 2, which was to be put ashore immediately southwest of South Vaagso, was to attack the town itself and carry out a number of military and industrial tasks.

Group 3 was to assault the Island of Maaloy.

Group 4 was retained as a floating reserve in the hands of the Military Commander of the Force.

⁶ Which was the cruiser.

⁷ Appendix "C" has been omitted, except excerpts: "General Remarks on Traffic, and Conclusion and Recommendations."

Group 5 was to be landed from a destroyer on the western shore of Ulvesund in order to cut communications between South and North Vaagso and to send a fighting patrol into the latter village.

The Landings

40. At 0839 the assault ships lowered all landing craft, which moved off in formation about three minutes later. In little more than five minutes No. 1 Group was ashore at Halnoesvik and the landing craft of Nos. 2 and 3 Groups were moving toward the headland just south of Halnoesvik Village.

41. Just before the landing craft came into view of the enemy defences in South Vaagso and Maaloy Island, the cruiser opened fire. The Naval bombardment was extremely accurate and most effective, and Lieutenant Colonel X, who was in command of Group 2 as well as being the Senior Officer, proceeding ashore, was able to let the landing craft of Groups 2 and 3 approach to within 100 yards of their landing places before sending up the "cease bombardment" signal of 10 RED Very Lights. RED rockets were immediately fired from the cruiser as a signal to the Hampden aircraft, who then came in at very low altitudes to drop their smoke bombs. As a result of these bombs, Group 3 completed their landing unopposed and the volume of fire brought to bear on Group 2 was considerably reduced.

The Operations Ashore

42. Groups Nos. 2 and 3 landed almost simultaneously, and from that time onward the sequence of events was as follows:

43. Group 1 cleared the area and village of Halnoesvik very rapidly and signalled the Headquarters Ship for instructions. They were at once ordered to move along the coastal road and to come into reserve at Lieutenant-Colonel X's Headquarters, which were situated near Group 2's landing place. This signal was made at 0950.

44. Group 3 very quickly gained control of Maaloy Island, where those enemy troops who had not been killed by the

Naval bombardment were for the most part demoralized and dazed by its effect and quickly surrendered. At 0920 Major * * * was able to signal that all guns on the Island were in our hands and four minutes later he reported that the whole area was under control. Destroyer B, carrying Group 5 and followed by Destroyer A, moved past Maaloy some 10 minutes later, as soon as the smoke had cleared sufficiently for them to do so, and entered Ulvesund.

45. Group 2, from the start, encountered very stiff opposition, both from German infantry who fought to the last man in the buildings in which they were established, and from snipers, armed often with automatic rifles, who took up positions on the hillside west of the town where they were very difficult to locate owing to the excellent natural cover. It must be emphasized that the opposition in South Vaagso was severe in degree and skillful in quality. It appears from the interrogation of prisoners that the garrison had been augmented by a detachment who had been moved into the town for Christmas, but, however that may be, there is no doubt that the fighting spirit, marksmanship, and efficiency of the enemy in this area was of a high order.

46. At 1020 Group 5 were landed just south of the village of North Vaagso. They cratered the coast road between North and South Vaagso and were able to capture a number of men who had escaped ashore from ships attacked by Destroyers B and A. A fighting patrol, which was sent forward into North Vaagso directly the Group had landed, collected the chief Quisling, took over the telephone exchange, and, before leaving, wrecked the instruments.

47. In the meanwhile, Group 3 had been instructed (0925) to send a party by landing craft to destroy the herring-oil factory at Mortenes, and at 1015 Captain * * * landed with his troop in the area of the factory and completed its destruction without meeting opposition.

48. At 1000 the situation in South Vaagso was not clear at Force Headquarters, since at that time little information had

been received from Group 2. The lack of news was due partly to the early destruction of two No. 18^s wireless sets, which is referred to later, and to the restrictions on visual signalling in the town. The Brigade Major accordingly spoke to Lieutenant-Colonel X on the wireless and was told that the firing had died down at the southern end of the town, that it was thought that opposition was nearly at an end, and that the more southerly demolition tasks would be started almost immediately. Lieutenant Colonel X said that he was going forward to reconnoiter and would report again in a few minutes.

At 1015 a signal was received from Group 2 saying that they could make use of the reserve troop, if available, to help in the clearing of South Vaagso. One section of Group 4 was therefore sent in at once with instructions to report immediately whether or not the second section was required.

At 1020 a signal was received from Group 2 saying that the situation in the northern end of South Vaagso was not clear and reporting that wireless sets of the forward troops had been destroyed (one, it was later learned, by a bullet and the other by fire when the smoke bomb struck the landing craft). This signal was immediately followed by another reporting "fairly strong opposition being encountered in center and north end of Vaagso" and requesting that the whole of Group 4 should be sent to the Group 2 landing place. The second section of Group 4 was sent at once to follow the first, which by now had almost reached the landing place at South Vaagso.

49. By now (1030) Group 2 were in fact in the midst of very bitter street fighting and were pushing steadily on from house to house. Their casualties were particularly severe in their effect because, in so many cases, it was the officers and

^s The Army No. 18 set is a radio telephone unit with a band of 6.0 to 9.0 megacycles. It has a range of 2 to 5 miles with a 6-foot rod antenna, and is customarily used for communication between battalion and company headquarters. It is also used by parachute troops. It is operated with dry batteries that have a life of 8 hours.

senior N. C. O.'s who had been either killed or wounded. For instance, out of the six officers of Nos. (CB) and (CC) Troops, who were the leading troops in the town, two were killed and three wounded, those killed being in each case the Troop Commanders.

50. As soon as Group 4 arrived, the Commander, Captain * * * reported to Lieutenant Colonel X and was ordered to support No. (CB) Troop, who were held up on the left flank, on the northern side of the town. Ten minutes later Group 1 arrived from Halnoesvik (1040) and was sent to support No. (CC) Troop in their drive through the center of the town and along the water front. A signal had in the meanwhile been made from Force Headquarters to Group 3 on Maaloy Island instructing them to find out from Group 2 in what way they could assist the operations in South Vaagso. As a result, Group 2 requested, and was immediately sent, No. (CD) Troop (less one section) under the Command of Captain * * *.

At the same time (1040) a signal was made to No. 5 Group ordering them to move southwards from their position near North Vaagso so as to close on the rear of the enemy in South Vaagso.

At 1100 Lieutenant-Colonel X was asked by Force Headquarters whether he required, or could make use of, support from a destroyer. He replied in the negative to this suggestion.

51. While this situation was developing in South Vaagso, No. (CA) Troop (which, together with Nos. (CB) and (CC) Troops comprised Group 2) had been carrying out its allotted tasks. These were: to supply a detachment for the protection of the landing place, another for the location and destruction of an antiaircraft gun reported at the southwest corner of South Vaagso, and a third which was to undertake the main demolitions. Accordingly, Captain * * * with a small Headquarters party immediately entered the canning factory close to the landing place and discovered the most prominent Quisling of the town hiding in the cellar. Another party

under Lieutenant * * * climbed the hill to the west of the town and, from the top, searched the area to the southwest as far as Halnoesvik and to the north as far as the dam which supplies power to the electric light station. The third party, under command of Lieutenant * * *, attacked a light machine gun on the hillock close to the landing place until it withdrew into the town, unloaded the demolition stores from the landing craft, and then joined up with Captain * * * in a search of the buildings in the immediate neighborhood. When this was completed, Lieutenant * * *, who was wounded in the elbow soon after disembarking but who continued in charge of his detachment for the remainder of the operation, proceeded to prepare the first factory for demolition. Captain * * * took his Headquarters' detachment forward into the town, where he assumed command of the remnants of No. (CC) Troop, all of whose officers were by then casualties, and reported to Lieutenant-Colonel X.

52. It was now 1100 and the situation in South Vaagso was as follows:

The original troops of Group 2 had suffered heavy casualties and were operating in small parties, very determinedly and often under the leadership of junior N. C. O.'s, but making only slow progress against the German infantry posts and snipers from the hillside. Groups 1 and 4 had arrived and had been sent forward into the town as reinforcements, and No. (CD) Troop (less one section) had landed from Maaloy Island. Lieutenant-Colonel X now went forward with Captain * * *, the Commander of No. (CD) Troop, to Lieutenant * * *, the Commander of No. (CE) Troop, and Captain * * *, the Commander of No. (CA) Troop, and took control of the situation. His two orderlies were both wounded, but with great coolness and complete disregard for personal safety, he reorganized his forces and directed a northward drive through the town until, when he judged the situation to be well in hand, he left Captain * * *, the Commander of No. (CD) Troop, in charge and returned to his Headquarters at 1145 to report progress to the Flagship.

Under this Captain the operation continued satisfactorily until all enemy opposition was silenced; until the industrial targets were covered; and until all demolitions were in progress.

53. After reporting to Force Headquarters, Lieutenant-Colonel X returned to the operations in the town and at 1230 was able to make a signal to the effect that resistance was nearly overcome but that he could not forecast the time at which all tasks would be completed. It was known at Force Headquarters by now that the majority of the industrial targets had been destroyed; and it could be seen that landing craft were becoming considerably dispersed in their work of ferrying wounded prisoners and loyalists back to the assault ships. This work was made more difficult by the intermittent air attacks which were taking place and by the necessity of holding off from the ships while they manoeuvred. Thus it was apparent that the organisation of the withdrawal might take a considerable time, and the Military Commander accordingly suggested to the Naval Commander that reembarkation should begin. The Naval Commander was in agreement and signals were then made to all ships and Military Groups at 1250.

54. Lieutenant-Colonel X held a short conference of Troop and Detachment Commanders in the middle of the town and issued orders for the withdrawal. Captain * * *, the Commander of No. (CA) Troop, was to endeavor to destroy the Firda Factory, the last industrial target remaining undemolished, by 1310. Captain * * *, the Commander of Group 4, was to withdraw his group at once and was to search for wounded on the way back and to remove all documents from the dead; and Lieutenant * * * with Group 1 and the details of No. (CC) Troop was to follow Group 4.

55. In the meanwhile, Group 5, whose southward move along the coast road had been delayed by the shelling from merchant shipping which had run themselves aground on the western shores of Ulvesund and by the capture of fugitives from the "Normar," were ordered by Headquarters to reembark to the north of South Vaagso in Destroyer B.

56. The withdrawal of all Groups was carried out without opposition, and if any enemy troops were left alive in the neighborhood of South Vaagso, they did not disclose themselves by resuming fire. Captain * * * of No. (CA) Troop, set the Firda Factory ablaze before returning through the town, and at 1330 Lieutenant * * * demolished the Seternes Lighthouse before disposing his detachment to cover the reembarkation of the last remaining parties. Lieutenant-Colonel X returned with the last landing craft, from which at 1408 he made the signal that all troops had left the shore.

57. The reembarkation had been completed and all landing craft hoisted by 1434.

58. In considering the course of the operation particular attention is drawn to the following factors both of which had important bearings on the course of the fighting: in the first place, the hampering effect of the desire to comply strictly with the orders which had been issued to avoid all possible damage to Norwegian property; and in the second place, the conflicting claims of the comparatively short time limit imposed by the whole nature of the operation, and of the restrictions on speed which are inherent in all street fighting conducted against determined opposition.

59. It here requires mention that the opposition was overcome, and all the demolition tasks completed, often under heavy enemy fire, well within the time limits laid down and that such results could not possibly have been obtained had it not been for the personal leadership of Lieutenant-Colonel X, and for the sense of discipline, initiative, and courage that was shown time and again by junior leaders, both officers and N. C. O.'s.

Tasks Completed

60. The lists of prisoners and Quislings captured and loyal Norwegians embarked for transfer to this country is contained in Appendix "D". It is estimated that at least 150 Germans were killed in South Vaagso and Maaloy by Naval, Army, and R. A. F. Forces, in the course of the operations.

Tasks Completed—Continued.

61. The tasks executed on shore were as follows:

- (i) All German Offices were burnt or demolished.
- (ii) The W/T⁹ Station and mast were destroyed.
- (iii) The German car and truck garage was destroyed.
- (iv) One German tank of 10 to 15 tons was entirely destroyed.
- (v) Four coast-defense guns and one anti-aircraft gun on Maaloy Island were blown up.
- (vi) The oil tanks on Maaloy Island were cut by explosives.
- (vii) The ammunition store on Maaloy Island was demolished.
- (viii) The German barracks and Headquarters on Maaloy Island were burnt out by the initial Naval bombardment.
- (ix) A searchlight and generator were blown up on Maaloy Island.
- (x) A beach-mine store was destroyed.
- (xi) A telephone-cable hut was destroyed.
- (xii) All huts used as billets by German soldiers, both in South Vaagso and Maaloy, were burnt down.
- (xiii) The Ulvesund Hotel, entirely occupied by German soldiers and held as a strong point, was burnt down.
- (xiv) The mechanism of Seternes Lighthouse was destroyed.
- (xv) The road was cratered between North and South Vaagso.
- (xvi) The telephone exchange was taken over and the apparatus smashed.
- (xvii) The building and plant of the main canning factory in South Vaagso were entirely destroyed by explosives.
- (xviii) The herring oil factory at Mortenes was entirely destroyed by explosives and fire.
- (xix) The Firda Factory was set on fire and left blazing.
- (xx) A smaller canning factory and herring oil factory were set on fire and the plant damaged by explosives (not yet confirmed).

⁹ Wireless (radio) telegraphy.

NAVAL OPERATIONS—0900–1445.

62. During this period the assault ships and Destroyer D had moved across to the south side of the Fiord to obtain cover in accordance with the pre-arranged plan.

63. The first sortie of Blenheims arrived shortly before 0930 while Destroyers B and A were taking up position to enter Ulvesund, but it was not possible to establish reliable R/T¹⁰ communication with them. (Maaloy Island was now in our hands but the smoke was still too thick for the destroyers to pass through Maaloysund.)

64. Two minutes later, at 0932, Rugsundo battery reopened fire on the cruiser, who hotly engaged with "A" and "B" turrets and again silenced the guns, which did not re-open fire until 1308.

65. By 0930 the smoke screen across the Rugsundo line of fire was thinning and Destroyer D was ordered to reinforce with smoke floats and funnel smoke, while moving fast. She did this well and also engaged the battery with a few salvos.

66. At 0945 Maaloysund was sufficiently clear for the destroyers to proceed. Destroyer B followed by Destroyer A entered Ulvesund. Further reference to their activities in this area are to be found in paragraphs 81 to 94.

67. The first enemy aircraft appeared at 1005, when two ME.109's¹¹ came in and immediately engaged two of our Blenheims, one of which was shot down two minutes later. This Blenheim would possibly not have been lost, and the mortality among German aircraft, later in the day, would probably have been higher if efficient R/T communication between ship and aircraft could have been established and maintained.

68. Quite apart from the need for efficient communication it was apparent that two R. A. F. Officers should be carried in the Headquarters ship with the sole duties of concentrating on the air situation and directing the fighters. The ideal

¹⁰ Radio telephone.

¹¹ German pursuit aircraft.

would be to have officers personally known to the Fighter Pilots and for these officers to have carried out rehearsals from the Headquarters ship.

69. The cruiser fired occasional salvos at Rugsundo battery, to check gun range, and to discourage any attempt to get their guns functioning again.

70. The second sortie (Beaufighters) arrived at 1015 and about 25 minutes later was in pursuit of the first two enemy bombers, JU.88's,¹² to put in an appearance. These two aircraft never got within range of the cruiser's guns. Only intermittent R/T communication could be established with the Beaufighters.

71. At 1100 the cruiser opened fire, at long range, on two ME.109's, who quickly turned away and disappeared to the South.

72. During this period the position regarding merchant shipping in Ulvesund had not been clarified, so it was decided to send in the cruiser's motor dingy, with Lieutenant * * *, R. N., in charge, to investigate and report. After entering Maaloysund this boat was heavily fired upon, caught fire, and burnt out. The crew were rescued by a support landing craft, Midshipman * * *, Royal Navy, being slightly wounded in the leg.

73. About noon a small number of enemy bombers were sighted to the northwards, but no attack developed at this stage.

74. During the period since the bombardment of Maaloy Island had been completed, Destroyer C had been protecting the Force from the west, and shortly after noon reported a Merchant Ship and Armed Trawler Escort proceeding to Vaagsfiord from the north. She was ordered to capture them if possible, and Destroyer D ordered to support her. Unfortunately, in spite of all efforts the Merchant Ship—S. S. "Anhalt"—beached herself and the Escort Vessel endeavoured to escape.

¹² German bomber.

75. Destroyer C proceeded to chase and engage the Armed Trawler "Donner," securing several hits. The crew abandoned ship but the vessel continued to steam out to sea at 10 knots. Destroyer C, proceeding to get alongside the Trawler, dropped a Carley Float and two rafts when passing near 10 or 15 of the crew who were in the water.

76. On arrival alongside the Trawler a small party was put on board with orders to stop the ship. Owing to a fire in the engine room this was not possible until Destroyer C again closed and played hoses into her engine room. The Trawler was then searched. Two Oerlikon guns and one Maxim gun were transferred to Destroyer C.

77. Insufficient fuel and lack of air to start engines prevented this vessel from being captured. Scuttling charges were fired at 1420 and the vessel left well out to sea and on fire from stem to stern. Search was then made for survivors and five out of a total of 25 were recovered. One of these, however, died later and was buried at sea.

78. During this period Destroyer D had closed the Merchant Ship ("Anhalt") and, using loud hailer, ordered the crew, in German, to bring their boats alongside. They were told that if the order was disobeyed, they would be fired on. The boats disregarded the warning and pulled for the shore, only a few yards distant. Destroyer D immediately opened fire and sank one boat. The other, although hit, succeeded in escaping in-shore while Destroyer D was engaged with enemy aircraft.

79. It was at this time, 1236, that all ships became engaged with enemy bombers. Several formations, generally consisting of two or three Heinkels, were driven off and their bombs dropped wide. At about 1245 smoke was seen to pour from the port engine of one aircraft of a formation of three HE.111 bombers¹³ which were being hotly engaged by the cruiser and Destroyer A. The aircraft then lost height but was not seen to crash.

¹³ German long-range bombers.

80. These raids continued until about 1300 and shortly afterwards Rugsundo battery re-opened fire. The cruiser immediately replied from "X" and "Y" turrets and with 4-inch. The cruiser was hit by one round on the armor belt and a few minutes later a near miss abreast the Port Torpedo Tubes slightly wounded one rating.¹⁴ At 1317 the cruiser received a hit which burst and holed her about 10 ft. above the water line abreast the bridge. Rugsundo battery was then finally silenced.

Destroyers A and B in Ulvesund

81. Having received the signal that Maaloy Island was in our hands and Maaloysund clear, the destroyers passed through the narrows and entered Ulvesund at 0941. A good deal of light fire was directed at the ships and Destroyer B sustained three minor casualties.

82. When clear of the smoke, the German S. S. "Regmar Edzard Fritzen," S. S. "Normar," and Armed Trawler "Fohn" were observed proceeding so as to beach themselves in the small bay immediately to the north of Brandhaunnes Point. A sketch showing the approximate position is attached as Appendix "E".¹⁵ Shots were fired across their bows and their upper decks were swept with Oerlikon fire but they had gained sufficient time to succeed in their project.

83. Destroyer B proceeded up Ulvesund and landed Group 5 at 1007. Two ME.109's were in the vicinity, one of which attacked Destroyer B with cannon fire but obtained no hits.

84. A party from Destroyer A, with Lieutenant Commander * * *, D. S. C., R. N., in charge and assisted by Lieutenant * * *, R. N. V. R., boarded "Fohn" at 1008. Rifle fire from this Armed Trawler was directed at their boat on the way in, but this was effectively stopped by Lewis gun-fire from Destroyer A. On boarding the Fohn it was found

¹⁴ "Enlisted men" in the Royal Navy are called "ratings."

¹⁵ This appendix was not received with the original report and therefore will not be available.

that the Captain was dead but the crew had escaped onto the road, only 30 yards from the shore. Lieutenant Commander * * *, and a party then boarded the S. S. "Regmar Edzard Fritzen," whose crew had also scrambled ashore. Subsequently 17 members of these two crews were captured.

85. Destroyer B who had now moved south, nearer to Destroyer A, boarded S. S. "Normar." This ship was afterwards sunk by Destroyer A.

86. Destroyer A then returned to the town anchorage to support our advancing troops and to board the Dutch ship "Eismeer" which had been abandoned after drifting on a rock in midstream. She was later sunk by gunfire from Destroyers A and B.

87. Destroyer B was ordered to deal with "Regmar Edzard Fritzen" and "Fohn." Both ships were completely destroyed.

88. During this period Boarding Parties came under fire from snipers ashore and it is regretted that the stroke oar of Destroyer A's whaler was killed. The background of snow and black rock enabled the snipers to conceal their positions most successfully. Destroyer A, however, used her main armament, pom-pom and Oerlikons, at intervals to keep down the fire.

89. While Destroyer A was boarding "Eismeer", a Merchant Ship was seen to enter Ulvesund from the northward under her own steam and with a tug in company. The Merchant Ship evidently thinking she was in good company flashed her name "Anita L. M. Russ" to Destroyer B who was lying off North Vaagso re-embarking part of Group 5. Both Merchant Ship and tug proceeded down Ulvesund. It was not possible for Destroyer B to send a Boarding Party as all her boats were inshore and it was not considered practicable to close alongside in view of the very confined waters and the fast speed at which the enemy ships were proceeding. Destroyer B was maneuvered stern on so as to avoid being rammed, should this be attempted. It was obviously a com-

plete surprise and no doubt something of a shock to the crews of these two ships when they saw the White Ensign.

90. Immediately after passing Destroyer B the tug turned hard to port and ran aground on the eastern shore. At the same time the merchantman turned hard to starboard and, proceeding at full speed, ran ashore onto the South Grandhaunnes Point.

91. Destroyer A opened fire on the "Anita L. M. Russ" just as she was beached. She caught fire and sank stern first, a little later. Destroyer B destroyed the tug.

92. Shortly afterwards, at noon, two ME.109's were in the vicinity and passed close over Destroyer B. They were engaged with pom-poms and Oerlikons, and hits were observed on one of them. Destroyer B then rejoined Destroyer A and proceeded to re-embark the remainder of Group 5 with their prisoners, while Destroyer A gave cover with supporting fire.

93. While No. 5 Group were being re-embarked snipers were very troublesome. Their stronghold was bombarded and sprayed with all armaments from both destroyers, and as a result no further trouble was experienced from that quarter.

94. On completion of their tasks, Destroyer A and Destroyer B proceeded southwards through Maaloysund and rejoined the Force in Vaagsfiord at 1356.

95. To cover the re-embarking of troops, Destroyer D was ordered to lay another smoke screen to mask Rugsundo.

96. Destroyer A and Destroyer B having rejoined the Force in Vaagsfiord were detailed to fire a few more salvos to keep Rugsundo quiet while the cruiser was re-embarking her troops.

97. All troops were re-embarked and a Naval Surgeon transferred from the cruiser to Assault Ship 1 to assist with their casualties. The Force then commenced the withdrawal at 1445.

BOMBING DIVERSIONS

98. At 1202, 13 Blenheims from No. * * * Squadron, each carrying four 250-lb. G. P. bombs¹⁶ and some 4-lb. in-

¹⁶ General-purpose bombs.

cendiaries attacked from a height of 250 feet the airdrome at Herdla (see map No. 1). Many hits were observed on the timber runways and an enemy fighter was seen to turn over while taxiing. P. R. U.¹⁷ photographs taken immediately after the attack confirmed that there were at least 20 new bomb craters on the airdrome.

99. It is to be regretted that two Blenheims were lost from this Squadron due to a collision after bombing; both aircraft fell into the sea. It is probable that this happened because one of them was hit by flak.

100. Six Blenheims from No. * * * Squadron, each armed with two 500-lb. bombs, left * * * at 0850 to patrol off the Norwegian Coast southwards from Obrestad. After keeping together to a point 2 miles southwest of Eigeroe the leader and one other aircraft carried out an attack on a single ship of 1,500 tons, while the remaining four proceeded towards a convoy observed 4 miles further south.

101. In the attack on the single ship one of the leader's bombs was observed to burst close to the stern, from which rose a column of black smoke. The second aircraft got caught in the leader's slipstream, one wing touched the sea, and the pilot had to jettison his bombs. Both these aircraft returned safely.

102. None of the four aircraft which turned South to attack the convoy has returned to Base, but a number of explosions were seen round the convoy and one ship was observed to be sinking rapidly with her stern well out of the water. There is no evidence to show how these four aircraft became casualties, but one was seen to make a good landing in the sea with the port engine on fire, while another crashed into the sea after being attacked by a fighter.

FIGHTER PROTECTION

103. Fighter protection over the Force was provided from 0928 until 1615 by Blenheim and Beaufighter aircraft * * *.

¹⁷ Photographic reconnaissance unit.

Five sorties were made from two British airfields as follows:

- 1st sortie—4 Blenheims;
- 2d sortie—4 Beaufighters;
- 3d sortie—3 Beaufighters;
- 4th sortie—3 Beaufighters;
- 5th sortie—4 Beaufighters.

With the exception of the fourth, enemy aircraft were encountered by each sortie and a satisfactory toll taken of them.

104. One section of Blenheims of * * * Squadron of the first sortie was attacked by ME.109F's¹⁸ at 1012; one Blenheim was seen to crash in flames near Rugsundo and the other aircraft was damaged and the Observer and Gunner wounded; this aircraft subsequently crash-landed at a British airfield at 1145. The other two Blenheims (* * * Squadron) returned safely to another home field.

105. Four Beaufighters of * * * Squadron made the second sortie; they sighted one ME. 109, which made off, and drove off a JU. 88. At 1215 one section was attacked by ME. 109's; one Beaufighter was seen by the leader to spin; this aircraft failed to return.

106. Three Beaufighters of * * * Squadron formed the third sortie and 58 minutes after relieving the second sortie at 1203 they attacked a formation of HE. 111's; our aircraft attacked and claimed as destroyed one HE. 111 and another as damaged and on fire. One Beaufighter was seen to break away and wobble; this aircraft did not return to base.

107. Four Beaufighters of * * * Squadron carried out the final sortie. An enemy formation of three HE. 111's escorted by two ME. 109's, which approached the Force in V formation, broke formation as a result of heavy and accurate gunfire at 1500, and were then attacked by the Beaufighters; two of our aircraft each claimed one HE. 111 destroyed. All four Beaufighters returned safely to their home field.

¹⁸ The ME.109F is an improved type of the ME.109.

THE NAVAL WITHDRAWAL

108. The destroyers were ordered to proceed out of the Fiord and form a screen for the assault ships and the cruiser, which left last. The cruiser stopped off the entrance and fired 15 rounds of 6-inch, at point-blank range, at the Merchant Ship "Anhalt", and she was left aground and burning fiercely.

109. A few minutes later, at about 1500, when ships had just cleared the Fiord, a formation of Heinkel bombers came in to attack. The aircraft were hotly engaged by the cruiser and destroyers with the result that the formation broke up and their sticks of bombs fell wide.

110. Destroyer B was detached to search for the crew of the Hampden reported by the Commander in Chief, * * *, to be down in the sea some 50 miles southwest of our position. It is much regretted that this search proved fruitless.

111. The Force was formed up and proceeding at 14½ knots by 1600, when our escort of Beaufighters had to break away and return to their base.

112. During dusk and in bright moonlight, at 1649 a single enemy aircraft was detected by the cruiser closing the Force, and shortly afterward the cruiser fired 6-inch blind barrage on starboard beam and the aircraft drew off.

113. A quarter of an hour later an aircraft was detected approaching from astern. A blind barrage was again used but a stick of bombs fell close on Assault Ship 1's starboard bow, astern of the cruiser.

114. During the attacks mentioned in paragraphs 112 and 113 the Force executed emergency turns to starboard. When darkness fell, a large alteration of course was made and the Force arrived at * * *,¹⁹ without further incident, at 1600, 28th December 1941.

¹⁹ A British naval base.

MEDICAL ARRANGEMENTS

115. Throughout the operation the medical arrangements worked smoothly, though owing to the cruiser's movements in engaging shore batteries and aircraft it was not found possible to embark her proportion of the wounded. A medical Officer was, however, transferred to Assault Ship 1 to assist there.

116. A total of 71 wounded were treated on board H. M. Ships, including prisoners and Norwegians, and it is satisfactory to note that Hospital Ships at the Base who subsequently received the wounded all reported on the high standard of treatment that had been given before discharge to Hospital.

LESSONS LEARNED

The Weather Factor

117. The successful execution of the plan finally depends on the following:

- (i) Precision navigation throughout.
- (ii) Exact Pilotage during final run-in.
- (iii) Correct timing for ships and aircraft.

Taking in account the vagaries of the weather on and off the Norwegian Coast and the average Winter conditions in the North Sea, it is thought that a Force setting out in what appeared to be favorable weather would, once in every four occasions, fail to find their objective within a reasonable margin of time. Of the remaining three occasions, a snow squall or heavy rainstorm during the final run-in may well upset the timing of the whole operation with serious results.

Exercise "L.2" clearly demonstrated that if the locality was blotted out at any time between Zero -15 and Zero +20 minutes, the chance of the operation proceeding according to plan was remote.

Air Support

118. Conditions may easily arise when Surface Forces can sail while Air Forces are unable to take off. When air support is an integral part of the plan, it is important that notice

of cancellation of air support should be given in sufficient time to allow Surface Forces to withdraw unobserved.

119. * * *

Treatment of German Merchant Ships

120. The experience gained with German Merchant Ships confirms that nothing short of complete ruthlessness is likely to be understood, or to achieve its object. In one case when the crew had taken to the boats they were warned in German, by loud hailer, that if they did not proceed alongside the destroyer they would be fired on; whereupon they pulled for the shore. All experience goes to show that German Captains have the strictest orders to render useless or destroy their ships at all costs and to abandon ship. The possibility of capture unless forced to abandon ship in a panic is therefore remote.

Bombardment Charges

121. The success of the bombardment of Maaloy Island was mainly due to the use of Bombardment Charges. In an operation of this nature involving bombardment at close range to cover a Military landing, it is most important that Bombardment Charges should be supplied in adequate quantity and in sufficient time to enable a practice bombardment to be carried out.

Floating Reserve

122. It is considered that the provision of a Floating Reserve is an essential requirement, even in small-scale combined operations. Though the Floating Reserve may only be a comparatively small body, it does at least give the Military Commander a detachment with which he can either send direct assistance to the troops on the shore or send to meet or delay some unexpected threat. Without such a body the Military Commander is at a very serious disadvantage. More often than not the Infantry Assault Ships will be unable to provide the accommodation required, and if this is so, arrangements should be made, if possible, for the

Floating Reserve to take passage in a warship. The value of such a reserve was more than proved in this operation.

Value of Smoke

123. The smoke bombs dropped by the R. A. F. were most effective and their use should be carefully considered during the planning of any operation which involves a landing at or after dawn.

Arming of Assault Landing Craft and Support Landing Craft

124. All Assault Landing Craft employed in the operation were ordered to have Bren guns mounted and ready for instant use. In view of the very small proportion of Support Landing Craft which can usually be afforded it is recommended that every Assault Landing Craft should to some extent be regarded as its own Support Landing Craft. If this is accepted, some form of protective shield, and a permanent fixture on which 2-inch or 3-inch mortars could be mounted, should be incorporated in their design. The provisions of such additions would not in any way diminish the value or the need for Support Landing Craft.

Maintenance of Communications

125. The need for good communications, particularly in a combined operation, requires no emphasis. Difficulties may arise, however, in maintaining both visual and wireless touch when Naval considerations require the Headquarters Ship to move to a position which interposes high ground between it and the shore wireless and visual stations. Such a situation arose during the operation while the cruiser was repelling air attack, but was rectified at the first possible moment.

In addition the Staff must be prepared to pass urgent Military signals through another ship which is in touch with the shore.

127. Each Force Commander will forward a separate report of recommendations for awards, but in the meanwhile they would like to draw particular attention to the conduct of the Press Unit who went ashore with the Force, and who, so far from hindering the operations, were on several occasions of great assistance in bringing back wounded and in carrying information.

----- (Signed)
Brigadier.
 ----- (Signed)
Rear Admiral.

- Appendix "A"—Details of the Military Force.
- Appendix "B"—Organization of Military Operational Headquarters on board the cruiser.
- Appendix "C"—Communications—Part I Naval, Part II Military. (Excerpts only.)
- Appendix "D"—List of Prisoners and Loyalists.
- Appendix "E"—Sketch showing approximate position of Merchant Shipping in Ulvesund. (Not available.)
- Appendix "F"—Sketch Map showing Military and Industrial targets (Map No. 2).
- Appendix "G"—List of German Ships Destroyed.

26. Appendices.—a. Details of military force:

REPORT ON OPERATION * * *

APPENDIX "A"

Details of the Military Force

*H. M. S. * * * (Cruiser)*

Brigade Headquarters:

Military Commander-----	Brigadier	* * *
Brigade Major-----	Major	* * * *
Intelligence Officer-----	Captain	* * *
Other ranks ¹ -----	Four	* * *

Brigade Signal Section:

Officer Commanding-----	Captain	* * *, R. Sigs.
Other Ranks-----	Eleven	

No. 4 Group:

Officer Commanding-----	Captain	* * *
Officers-----	Two	
Other Ranks-----	Sixty-four	

*H. M. S. * * * (Assault Ship 1)*

Group 2:

Officer Commanding-----	Lieutenant-Colonel	* *
Officers-----	Fourteen	
Other Ranks-----	One hundred and ninety	

*H. M. S. * * * (Assault Ship 2)*

Group 1:

Officer Commanding-----	Lieutenant	* * *
Officers-----	Two	
Other Ranks-----	Forty-three	

¹ "Other ranks" is the British equivalent for "enlisted men."

Group 3 :

Officer Commanding----- Major * * *, M. C.
 Officers----- Seven
 Other Ranks----- One hundred and thirty-two

*H. M. S. * * * (Destroyer B)*

Officer Commanding----- Captain * * *
 Officers----- One
 Other Ranks----- Thirty-eight

STRENGTHS

	<i>Officers</i>	<i>Other Ranks</i>
Brigade Headquarters-----	3	4
Brigade Signal Section-----	1	11
All No. (B) Commando-----	26	372
Detachment No. (BA) Commando-----	5	102
Detachment R. A. M. C. No. (BB) Commando--	1	3
Detachment R. E. No. (BC) Commando-----	1	6
Royal Norwegian Army-----	6	27
War Office (M. I. 9)-----	2	--
Press and photographers-----	6	--
Total-----	51	525

b. Military headquarters on cruiser :

REPORT ON OPERATION * * * (Code name)

APPENDIX "B"

*Organization of the Military Operational Headquarters on
 Board H. M. S. * * * (Cruiser)*

The Military Operational Headquarters of the Force consist of :

A. The Military Commander of the Force (Brigadier * * *, Commanding Special Service Brigade).

The Brigade Major, Special Service Brigade (Major * * *).

Two orderlies.

Signal Clerk.

Three signal orderlies.

B. The Military Intelligence Officer of the Force (Captain * * *, Staff Captain "A", Special Service Brigade).

The Chief Clerk, Special Service Brigade.

Two orderlies.

C. The Military Signalling Officer of the Force (Captain * * *, R. Sigs. (Royal Signals), Brigade Signal Officer).

2. The Military Headquarters of the Force were in H. M. S. * * * (Cruiser) for the ten days preceding the operation and for the operation itself. In action, it was disposed as follows:

Group A was on the Bridge of H. M. S. * * * (Cruiser), with the Military Commanders in close touch with the Naval Commander throughout the operation.

Group B was situated in the Plot. A large-scale sketch map of the area was prepared, placed on the chart table and marked up as the situation developed. This map could be seen through the eye pieces on the Bridge. The Intelligence Officer kept up the situation from the information passed to him by the Brigade Major down the voice-pipe and from the signals. The signals were passed to him as soon as they had been dealt with; a spare copy of the "out" signal was made for this purpose and "in" signals were passed down as soon as they had been seen on the Bridge.

The signallers were disposed throughout the Bridge superstructure and particularly in the Remote Control Office which was adjacent to the Plot.

The Military Signalling Officer supervised communications generally, dividing his time between the Bridge and the Remote Control Office. The system of communications is described in Appendix "C".¹

¹ This part of Appendix "C" has been omitted.

3. The method described in paragraph 2 above worked well and the Military Commander could be kept completely up to date with regard to the situation ashore insofar as it had been reported by the shore parties. Information, such as the time it would take a certain Group to move a certain distance by a certain means, could be obtained very quickly from the Plot where all distance tables, photographs, plans, and intelligence information were kept ready by the Chief Clerk. In addition, a diary of events ashore, as revealed by the signals and by observations reported from the Bridge, was kept up by the Chief Clerk under the supervision of the Intelligence Officer.

c. Excerpts from Appendix C: Communications:

(EXCERPT)

REPORT ON OPERATION * * *

APPENDIX "C"—COMMUNICATIONS

Part II—Military

General remarks on traffic

Communications by V/S to the Infantry Assault Ships was continuous. To shore stations it was sometimes interrupted by smoke. R/T communication generally was subject to interference and gunfire effects, but was fairly successful on the "Brigadier's Wave" during the whole period.

R/T Communication faded out at the Headquarters ship on one occasion when she moved behind a hill which at the same time cut off V/S communication to the shore.

The chief sources of wireless interference were:

(a) The ships' low frequency W/T transmitter when radiating.

(b) A 10-inch Arc S. P. working only a few feet from the No. 18 sets, in the Headquarters Ship.

(c) R. D. F. transmission in the Headquarters Ship, the effect of which was equally marked on shore.

It was possible for good operators to work through (b) and (c) but traffic was slowed down by the constant repetitions

that were necessary. It was practically impossible for officers to conduct useful R/T conversations.

The effects of gunfire and blast from demolitions on the No. 18 sets were twofold; firstly, during transmission, it drowned the operator's voice in the microphone and only the noise of the explosion was transmitted; secondly, it disturbed the tuning adjustment.

Operators on the exposed Flag Deck were also deafened and a good deal fatigued by the noise of the continuous gunfire.

The time taken in transit by messages naturally depended on their length but was usually short; V/A messages averaging six minutes, and R/T messages taking about ten minutes, being slower than V/S owing to the interference and gunfire.

The volume of military traffic was much higher than it would have been for a similar-sized force engaged in land operations only. It was greatest in the initial stages of the landing parties' operations. The messages flowing through the signal office on the Headquarters Ship averaged 30 per hour, of which about one-third were intership messages of naval significance only. Practically all the traffic between Headquarters Ship and the Infantry Assault Ships was by V/S, but the majority of messages between Headquarters Ship and shore stations went by R/T, the proportion being about two in every three passed.

Details of messages passed at headquarters ship

Total Military messages, in-----	79
Total Military messages, out-----	79
Total Military and Naval messages passed through the Signal Office between 0900 and 1500-----	186
Total Military messages passed by R/T-----	71
Total Military messages passed by W/T (Ships instal- lation)-----	24
Total Military messages passed by V/S-----	42

Conclusion and recommendations

1. The value of early and close liaison between the respective officers in charge of Naval and Military communications can-

they are to work successfully during gunfire. One result of these effects is that no reliance can be placed on preliminary netting carried out before sailing for an operation.

7. Little advantage was gained on the Headquarters Ship by detailing extra wireless sets to "listen in" on commando wireless nets, since it was extremely difficult for the operators to interpret the conversations to which they were listening. On the other hand, these listening sets might be of very great value at a time when other links had broken down (as, for example, with Group 2 at one brief but important period) provided the Military Commander or his Staff "briefed" the listening operators, through the Signal Officer, as to the information required. They might, however, prove valuable, and their retention as part of a signal organization for a combined operation is recommended.

8. Spare batteries must always be available for every No. 18 set even during very short operations, owing to the uncertain life of these batteries.

d. Evacuated prisoners and loyalists:

REPORT ON OPERATION—

APPENDIX "D"

List of Prisoners and Loyalists

GERMANS

(including wounded)

Naval	Merchant Navy		Military		
Officers	Ratings	Officers	Ratings	Officers	Other ranks
NIL	15	6	36	1	40

NORWEGIANS

Quislings

4

Loyalists

77

TOTAL PRISONERS

Officers-----	7	Quislings-----	4
Ratings and other ranks--	91	Loyalists-----	77
98			

e. List of German shipping destroyed:

REPORT ON OPERATION ¹

APPENDIX "G" ²

List of German Ships Destroyed

	<i>Tons</i>
Armed Trawler "FOHN"-----	³ 250
S. S. "REMAR EDZARD FRITZEN"-----	³ 3, 000
S. S. "NORMAR" ex "CALYPSO"-----	³ 2, 220
Armed Tug-----	200
S. S. "ANITA L. M. RUSS"-----	³ 2, 800
Small Coaster-----	³ 300
S. S. "EISMEER"-----	1, 000
S. S. "ANHALT"-----	5, 930
Armed Trawler "DONNER"-----	³ 250
Total-----	15, 950

¹ Code name.

² Appendix E was not sent with the original report from London. This appendix consisted of a sketch showing the approximate position of merchant shipping in Ulvesund. Ulvesund is shown in Map No. 2 (Appendix F of the original report), a sketch of military and industrial targets at Vaagso.

³ Approximately.

27. Notes for Lessons by Boarding Party Commander:

NOTES FOR LESSONS LEARNED IN THE VAAGSO RAID, PREPARED BY OFFICER IN CHARGE OF BOARDING PARTY

1. Whenever another raid is planned where there is a possibility of merchant shipping being captured, it is essential that boarding parties who have already undergone intensive training should be taken in addition to the ship's complement. Their instruction should include:

(a) The provision of covering fire by the seamen part of the boarding party;

(b) Instruction in searching the various departments of the ship by ratings of the appropriate department, i. e., E. R. A.¹s for Engine Room, Stokers for Boiler Room, etc.;

(c) Use of demolition charges and particularly thermite bombs (which were overlooked on this operation).

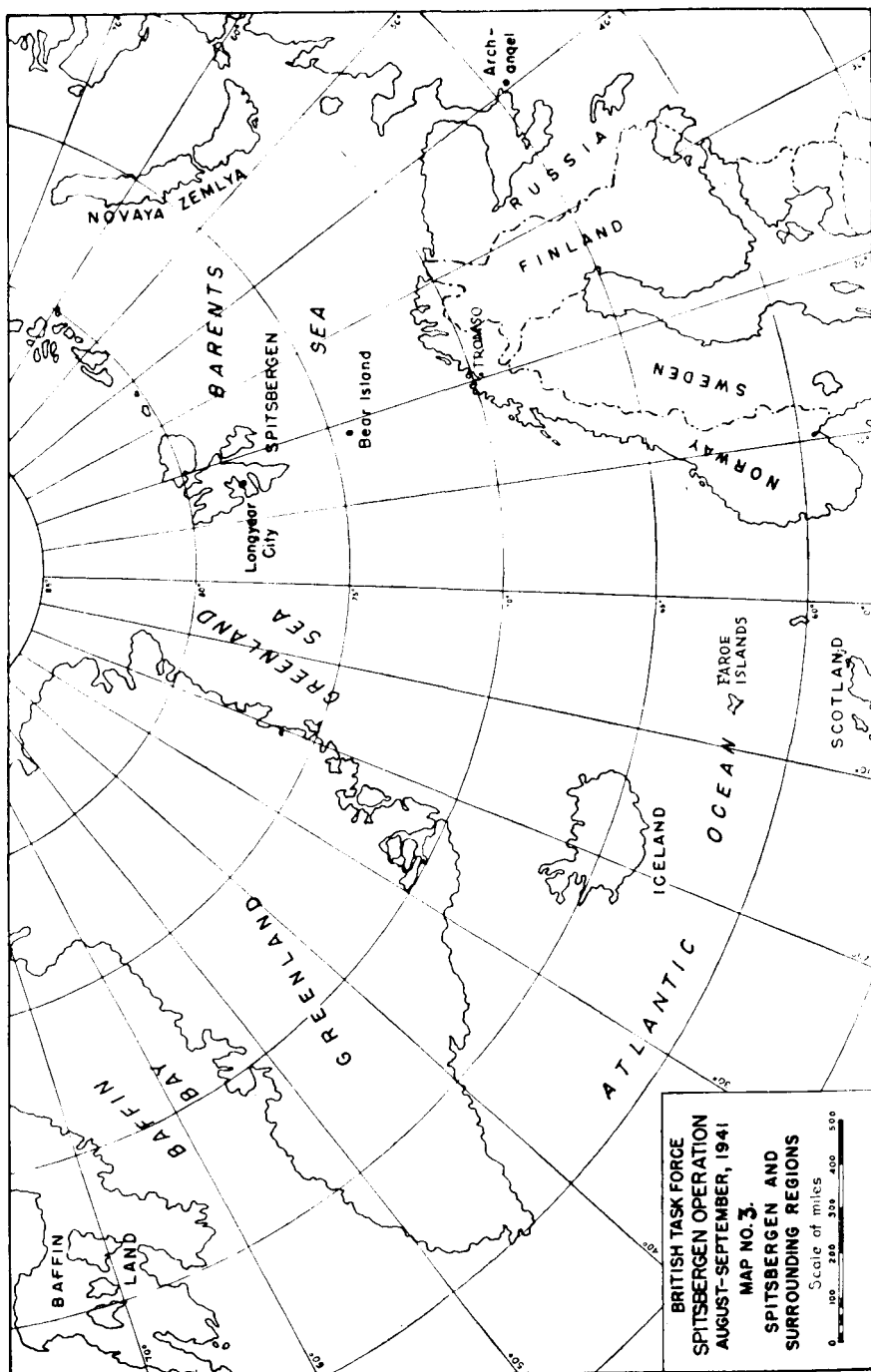
Each party should include one E. R. A. with Diesel experience. Had there been an E. R. A. with Diesel experience in H. M. S. Destroyer A, I have little doubt that we could have brought back the Eismeer.

2. It is considered that where H. M. Ships are likely to enter fiords, snipers should be provided on the scale of two per destroyer, who should be marksmen and should be equipped with sniper's rifles (a long Lee-Enfield with telescopic sight is suggested). These ratings should have full authority to open fire without further orders whenever a target presents itself.

3. It is considered that when there is a likelihood of meeting with an armed trawler, or with armed trawlers, one destroyer should be told off to deal solely with the armed trawler and that the Captain of that ship should be fully instructed in the

¹Engine room assistant.

importance of his task. The best method of dealing with these trawlers appears to be that their bridge and upper deck should be "plastered" with light fire, i. e. Oerlikon, machine-gun, and rifle fire, to such an extent that no one could live on the upper deck, and the crew subsequently become panicked and leap over the side. The trawler can then be searched with some possibility of obtaining valuable documents.



SECTION II

British Task Force, Spitsbergen Operation¹

28. Strategic Value.—This report deals with the combined operation successfully completed by a small task force of Canadian, British, and Norwegian troops in the islands of Norway's Spitsbergen Archipelago during August and September 1941. These islands had acquired additional strategic importance after Germany began war against Russia on June 22, 1941, because of their position on the Arctic Ocean route to Russia's northern ports (see Map No. 3). Before this date the islands, although not garrisoned by the enemy, served the Nazis as a shipping base, a source of coal, and a weather station.

The purpose of the expedition was to destroy coal mines and stocks of free coal, transit facilities between mines and harbor installations, and wireless and meteorological stations; to repatriate all Russians to Archangel; and to evacuate all Norwegians to the United Kingdom. A preliminary reconnaissance by a destroyer indicated that the landing would be unopposed. It was believed, however, that

¹ Although this raid was not carried out by commando troops proper, it is included in this bulletin because the mixed task force received typical commando training for a combined amphibious operation.

the enemy would be able to attack the task force with 60 to 100 bombers based on airfields 350 miles or more distant. The commander of the Canadian Corps in Great Britain said he believed the expedition would be worth while even if the only result should be to divert a sizable force of bombers from their regular missions, where they would do far greater harm.

Before actual training for the expedition was started, considerable preliminary planning and political conversations between British and Canadian civil and military authorities were necessary. This preliminary phase will not be discussed here, but it is mentioned in order to stress that a great deal of time is needed in order to lay the groundwork for an operation of this kind.

29. Special Training.—The task force was assembled in the Combined Training Center in Scotland on August 8, and it trained intensively and realistically for the mission. This training program stressed landings on a coastline controlled by the enemy. The troops were divided into two main groups which took turns on alternate days at practicing boat landings and unloadings, and going on stiff hikes through hilly terrain. They were also trained thoroughly in demolitions, map reading, and street fighting.

30. Composition of Force.—The task force was mixed, consisting of 47 officers and 599 enlisted men of the Canadian, British, and Norwegian Armies

under command of a Canadian brigadier. By nationalities, there were: Canadians, 29 officers and 498 enlisted men; British, 15 officers and 79 enlisted men; Norwegians, 3 officers and 22 enlisted men. (See Appendix A, below, for detailed composition of the task force.) In addition there were 31 enlisted men of the 1st Maritime Antiaircraft Battery of the British Army who, because they manned the Bofors guns on the troop transport, were considered a part of the ship's crew and not of the task force.

31. Unity of Command.—Although the Canadian brigadier was in charge of all the troops and of land operations, the expedition as a whole was under the command of the rear admiral in charge of the expedition's naval units. The following excerpts from the directive for the expedition show why this responsibility was assigned to the naval commander:

“The enemy is not yet in occupation of the islands, which we hope will still be unoccupied by the enemy when you (the brigadier) arrive. In the event, however, of your finding enemy forces in occupation, you will report to the naval commander whether, in your opinion, you will be able to put your force ashore and carry out your task. It is fully realized that, if the enemy is established in the islands in any strength, your force is not suitably equipped to effect a landing in face of opposition.

“The final decision as to whether your force is to be landed will lie with the naval commander * * *.

“The conduct of the expedition will, while at sea, be the responsibility of the Royal Navy. Operations ashore will be under your command.

“Should, however, any question arise, while your force is ashore, which affects the security of the forces under your command or the execution of your task, your decision will be paramount; except that, should the naval commander consider it necessary to withdraw your force before its task is complete, you will comply * * *.”

32. Voyage.—At 0100 on August 19 the force sailed for Spitsbergen on a transport that was escorted through the North Channel into the Atlantic Ocean by an aircraft carrier and three destroyers.² The commander of the force outlined the mission to his senior officers on the first day out. On the evening of this same day the naval escort left the transport at a rendezvous with a squadron consisting of two cruisers and three destroyers, which was to accompany the transport to Spitsbergen.

On the morning of August 21 the expedition arrived at a port in northern waters where the military commander and the naval commander drew up detailed plans for the operation. The force sailed again at 2100 on August 21, after refueling. The commanding officer explained the purpose of the expedition to the whole force on the evening of August 22. It was on this date that the troops

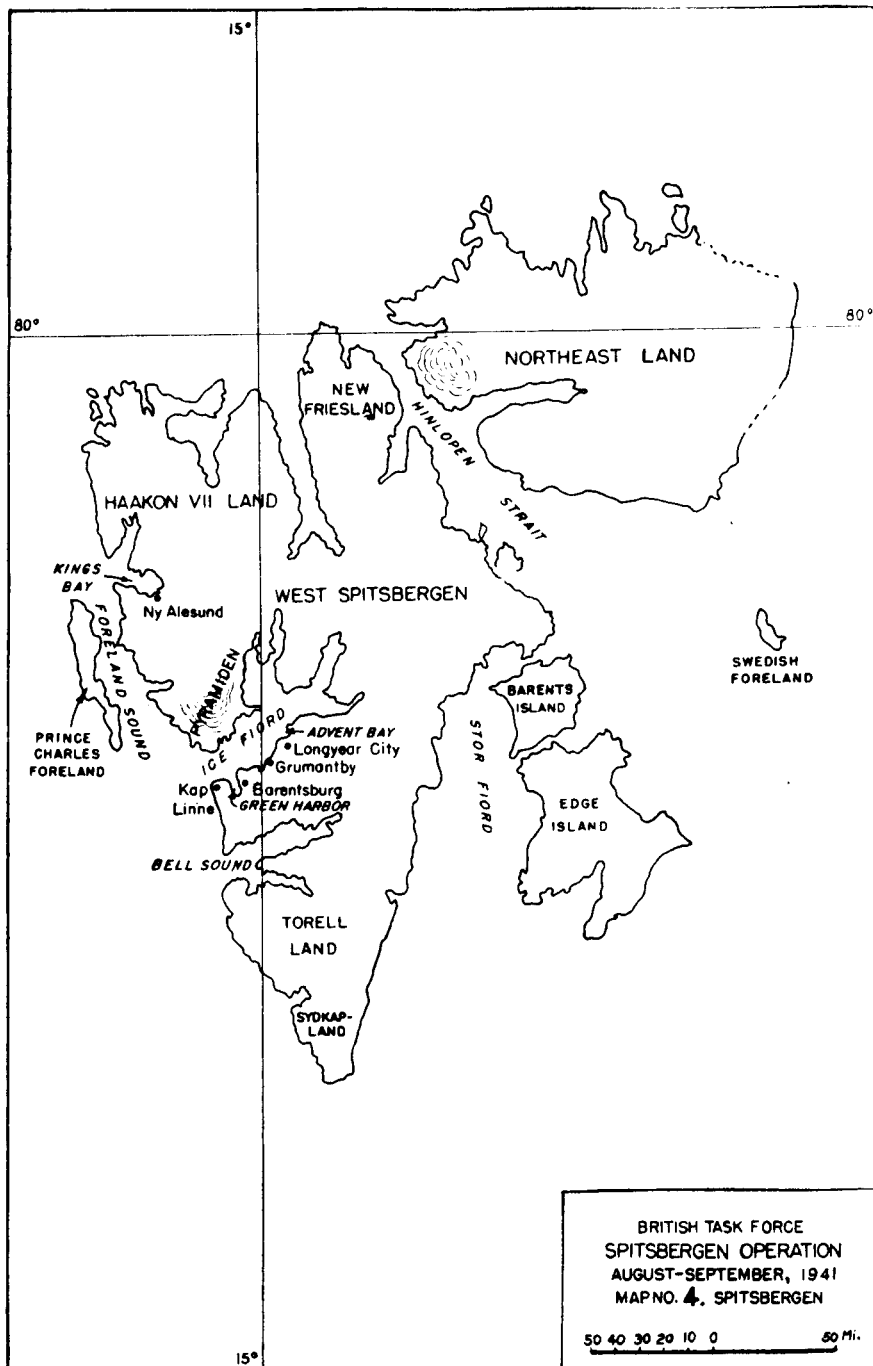
² For notes on the expedition, see Appendix B, excerpts from the diary of a newspaperman, Mr. Ross Munro of the Canadian Press, who accompanied the force.

learned for the first time that they were going to Spitsbergen.

The squadron was to keep another rendezvous with four naval trawlers and an oiler. In an effort to establish contact without using radio, which might have betrayed the expedition, two planes were sent up from a cruiser on August 24. The aircraft spotted the additional ships and by evening of that day the two naval units joined. Then they steamed toward Spitsbergen to make a landing next morning.

Before the ships approached land, two Walrus planes of the Fleet Air Arm reconnoitered Ice Fiord (Isfjord), the great inlet on the island of West Spitsbergen on which the most important settlements of the archipelago are located (see Map No. 4). No enemy activity was observed and the ships moved in.

33. Landing and Operations.—The first landing was made at 0430 on August 25 by five men of the Royal Canadian Corps of Signals and four Norwegians, who seized the wireless station at Kap Linne, on the south side of the mouth of Ice Fiord, with the cooperation of its Norwegian staff. About 0700 the large ships of the squadron steamed into Green Harbor and anchored near the Russian mining village of Barentsburg. A landing was made there at 1000, and it was obvious there would be no opposition, for the jetty was crowded with unarmed and curious civilians. The Russian community, in fact, had been apprised by radio from Leningrad of the purpose of the expedition and had completed plans for evacuation.



Other detachments proceeded in small vessels to other Russian and Norwegian settlements on Ice Fiord, one party landing at Longyear City on Advent Bay, the chief Norwegian settlement. Here, too, the wireless station was seized. A small party of Royal Engineers and of the Canadian * * * Regiment went to Grumantby, on the south shore of Ice Fiord, and another party to Pyramiden, near Mount Pyramid, at the head of Ice Fiord. The latter two places were Russian mining settlements. Demolitions of facilities and destruction of free coal was started immediately. From Grumantby 638 persons were evacuated and from Pyramiden 99 persons.

The next important mission was to take the Russian population of 1,969 persons, including 326 women and 72 children, to Archangel. The Canadians worked arduously on August 26 to unload the transport of military stores and to load the considerable personal baggage and communal property of the Russians. About midnight of August 26-27 the transport sailed for Archangel with an escort of one cruiser and three destroyers. A platoon of infantry, a group of machine gunners, and a medical detachment remained on the transport for protective duties.

34. Major Demolitions.—With the Russians gone, demolitions in the Barentsburg area began on August 27. A disused wireless station at Finneshavn on the east side of Green Harbor was destroyed by engi-

neers. Two other stations, having been active, were continued in operation throughout the 10 days of the occupation in order to avoid arousing suspicion. Fires were started in coal dumps at many places by the free use of oil and gasoline and by incendiary bombs. A total of 370,000 tons was reported destroyed by these means. At Barentsburg a heavy crane, trestles, frogs and switches of the narrow-gauge railway, hoisting machinery at the New Mine, and four motor boats were demolished. Approximately 225,000 gallons of oil stocks were burned. Numerous stores and spare parts were removed.

At Longyear City the aerial tramways for transporting coal from the three mines were disabled, the motors were removed from the turbines in the power plant, and the wireless station was destroyed. About 50,000 gallons of fuel oil and gasoline were poured into the sea.

Mine entrances and the surface plant and other installations at Grumantby and Pyramiden were destroyed by explosives. At Ny Alesund on Kings Bay the power plant of a mine was destroyed, wireless masts were felled, and a motorboat and a lighter were wrecked.

35. Evacuation of Norwegian Settlements.—The concentration of the Norwegian population was going on meanwhile, and by the time the transport returned, at 2230 on September 1, a total of 799 persons had been assembled at Longyear City. The transport brought back from Archangel 192 Free French mili-

tary personnel, including 14 officers, who had escaped from German prison camps. The transport and her escort began the homeward journey at 2300 on September 3, arriving in Great Britain on the night of September 7-8.

36. Signal Operations.—The two chief radio stations on the islands were at Kap Linne and Longyear City and both of them were in touch with the German-controlled station at Tromso, Norway. The Kap Linne station was put out of action at 1800 on September 3. With the loyal and efficient cooperation of the Norwegian operators, normal transmissions to Tromso were continued from Longyear City for the purpose of concealing the fact that any unusual event was taking place at Spitsbergen. The usual meteorological data were sent out until August 27, when the transport had left for the North Sea with the Russians. Then the meteorological readings were altered gradually to indicate bad flying conditions in order to discourage German air reconnaissance.

To keep up the deception until the last possible moment a party consisting of one officer and 11 enlisted men of the Royal Corps of Signals, a Norwegian operator, and a power-plant engineer was left behind after the withdrawal of the main body of troops at 2200 on September 2. This party sent its last weather report at 8 p. m. on September 3, dismantled the station and power house, and embarked on a destroyer at 2330. Apparently the deception was complete, for when the force was well out to sea

Tromso was heard calling Spitsbergen strongly and inquiring what was wrong.

37. Secrecy.—Every possible precaution was taken to keep the expedition secret, particularly its departure and objectives. In the early stages it was treated as an exercise, and only a very small group of officers at Canadian Military Headquarters had any knowledge of it. The operation was first offered to the Canadians on July 25, 1941, but the word "Spitsbergen" was not placed in the secret file of the expedition until August 16, 1941. After the force returned, a communique was issued to report the results obtained.

38. Appendix A.—Composition of Task Force:

APPENDIX A

COMPOSITION OF SPITSBERGEN TASK FORCE

UNIT		
	<i>Officers</i>	<i>Enlisted Men</i>
Canadian:		
Headquarters, *** Canadian Infantry Brigade-----	5	12
Signal Section, *** Canadian Infantry Brigade-----	2	32
*** Field Company, Royal Canadian Engineers-----	5	191
*** Company, *** Regiment, plus one platoon from *** Company-----	6	153
*** Light Infantry (Machine Gun) (composite detachment)-----	4	80
Detachment Royal Canadian Army Medical Corps (from *** Canadian Field Ambulance)-----	3	23

	<i>Officers</i>	<i>Enlisted Men</i>
Canadian Field Cash Office, Royal Canadian Army Pay Corps-----	1	2
Assigned to Troop Transport (from *** Regiment) -----	2	5
Captain ***, Royal Canadian Engineers--	1	--
	29	498

British :

Detachment, *** Corps troops, Royal Engineers -----	4	31
Detachment, *** Docks Operation Company, Royal Engineers-----	1	18
Detachment, Section ***, Motor Boat Company, Royal Army Service Corps-----	1	19
Detachment, Detail Issue Depot ***, Royal Army Service Corps-----	--	6
Field Cash Office ***, Royal Army Pay Corps-----	1	2
Royal Engineers (Movement Control) attached to Brigade Headquarters-----	--	3
Intelligence Corps-----	3	--
Army Film Unit-----	1	--
Major ***, Liaison Officer-----	1	--
Major ***, Royal Engineers-----	1	--
Captain ***, Royal Engineers-----	1	--
Major ***, Royal Army Service Corps--	1	--
	15	79

Norwegian :

Detachment, Norwegian Infantry -----	3	22
--------------------------------------	---	----

Total, Canadian, British, Norwegian-----	47	599
--	----	-----

NOTE.—31 enlisted men of * * * Maritime Anti-aircraft Battery, Royal Army, manned the Bcfors guns on the transport; they are not included here, as they were presumably regarded as a part of the crew of the ship.

39. Appendix B.—Diary of Newspaperman with Task Force:

Diary kept by Mr. Ross Munro, Canadian Press, of Operations of Spitsbergen Task Force

(Excerpts)

* * * * *

(The portions relating to events previous to actual departure for Spitsbergen are omitted.)

* * * * *

ARCTIC FORCE DETAIL DIARY

Tuesday, Aug. 19.

Sail in darkness, joined by 3 destroyers, * * * (aircraft carrier) with Hurricanes and some Canadian pilots. Coastal Command bombers patrol us as we move northwest.

The Commander holds conference at which reveals we are going to a northern island under Norwegian sovereignty to incapacitate coal-mine operations until spring and to take off 1,800 Russians and 800 Norwegians. Russians to be taken to Archangel. Norwegian detachment and Norge Governor with us. Big job for sappers. Navy will join us later and plans drawn up in detail.

Gunnery practice—Bofors and machine gun.

In evening aircraft carrier and 3 destroyers leave us and we are joined by 3 destroyers and 2 cruisers.

Wednesday, Aug. 20.

Head steadily NW for a northern port where will refuel. Cruiser on ack ack practice in a. m. with "4" guns. Aircraft patrols overhead. We are going to Spitsbergen island and on to Russia.

Stand 4 hours watch on bridge during day.

Smoker in evening on suggestion of Commander.

Thursday, Aug. 21.

Arrive a northern port about 0900. Br. and American warships there. U. S. air patrol.

Friday, Aug. 22.

Leave a northern port in morning light. Sea smooth but patched with fog throughout the day.

Commander holds conf. for officers and then tells all plans to men before ship's concert at night.

Saturday, Aug. 23.

Continue to move ahead at 20 knots thru calm sea and fog. OC's conf. held and detailed plans discussed.

Plan to send—(individual's name) with Norwegians to Advent Bay. I will remain with Commander at Barentsburg until Russians aboard transport.

Sunday, Aug. 24.

Convoy circles north of Bear Island, seeking trawlers and oil tanker. Aircraft takes off to search sea. Early in the evening, other ships sighted and the whole convoy together. Stores ready and men armed, ready for landing. Final conferences wind up plans of operations.

Monday Aug. 25.

Steam up Green Harbor at 0700 and by 1000 Commander lands, protected by detachment of infantry. Conference held with Russians who prepare to leave.

Spend day ashore and return to transport for supper and sleep.

Tuesday, Aug. 26.

Return to shore in launch. Evacuation continues all day long and is only completed (Russian) by evening. But this is record time.

Canadians take over town completely and plans laid for demolitions.

One of the most fantastic days I've ever been thru.

Transport, a cruiser, and five destroyers sail at midnight.

Wednesday, Aug. 27.

Demolitions start at Barentsburg. Sapper subsection goes by motor boat to radio station down Green Bay and with three charges, totalling 40 blocks of gun cotton, topples the radio towers, both 300 feet high.

Then demolitions carried out in a coal mine.

Major * * * goes to Longyear City to start demolitions and fires there.

Thursday, Aug. 28.

Demolitions and fires continued. 150,000 tons coal fired down Bay and 75,000 gallons fuel oil destroyed. Demolitions attempted in mine buildings and mine set ablaze. Brought under control by sappers but still smouldering.

Friday, Aug. 29.

Go from Barentsburg to Svalbard (Green Harbor) by motorboat in 3½ hours journey. Pass Grumantby, blazing and smoking like Chicago fire. Move into clean and neat Norwegian town.

Saturday, Aug. 30.

Spend all day looking over town, defense posts and learning of operations generally. Preparations made for fires and demolitions.

Sunday, Aug. 31.

Attend church service in a. m. Sailors, soldiers, (Canadian and Norwegian) and Marine band march from jetty to church, decorated with Union Jack. White Ensign and Norwegian Flag.

In p. m. fly in Walrus flying boat to Barentsburg.

Shoot roll of film and come back by air in an hour.

Monday, Sept. 1.

Turn out first copy of "Spitsbergen Arctic News." Hear that Barentsburg blazing. Expect transport tomorrow.

Tuesday, Sept. 2.

Transport at Barentsburg and loading starts. Norwegians all leave Svalbard and preparation made for fires and demolitions.

During night cover 150,000-ton coal fire and the big blasts. No get to bed till 0600.

Wednesday, Sept. 3.

2d anniversary of the war. Leave Svalbard aboard destroyer at 1100 and sail to Barentsburg to board the transport.

French troops aboard and 900 Norwegians.

Four weeks today expedition left camps.

Sail at midnight and pass blazing Barentsburg. Can see Grumantby burning down Isfjord.

Thursday, Sept. 4.

Calm seas as flotilla speeds south. Learn we are going direct and some talk we'll put in to where I could get my story away to London.

Friday, Sept. 5.

Still heading S. and I estimate we're not far off Norwegian Coast. Some officers think we might be making another raid. It sounds ridiculous with all these civilians aboard.

Saturday, Sept. 6.

Cruisers leave us. Sunderland flying boat and a Beaufighter spot us. We begin to feel safe again.

The Faroe islands appear in mist off starboard bow.

During evening we are in British waters and can see green and brown hospitable shores of Scotland. Tremendous elation aboard.

Learn we are going direct to * * * (a Scottish port). Two destroyers replaced by two others. Destroyer * * * continues with us.

Sunday, Sept. 7.

Move down W. coast Scotland and go into * * * (a Scottish port) at night.

Anchor at 0200.

Monday, Sept. 8.

Troops leave ship at 1400 and return to camps in S. England.

40. Lessons of the Spitsbergen Operation.—*a.* Value of the raid.—The strategic importance of the islands of the Spitsbergen Archipelago increased considerably after Germany began her war against the Union of Soviet Socialist Republics on June 22, 1941. Consequently the primary value of the operation was that it destroyed the facilities of a potential air and naval base from which Germany could have attacked British and American shipping along the Arctic Ocean supply route to Russia's northern ports. The expedition also deprived the Germans of a source of coal and of a radio meteorological station which, through the Nazi-dominated radio station at Tromsø, Norway, had furnished the German Air Force with valuable weather data for bombing raids against the British Isles.

b. Special Training.—Even though no opposition was expected, the members of the expedition were thoroughly trained and conditioned for an opposed landing. The intensive course they underwent at the Combined Training Center enabled the ground troops and naval units to work together with a maximum of efficiency. Each group rehearsed its role and learned exactly when close coordination was necessary. The physical hardening of the men enabled them to endure the extremely strenuous labor necessary in carrying out demolitions, and in loading and unloading ships.

c. **Unity of Command.**—Supreme command of the expedition was assigned to the naval commander because of the vulnerability of the naval units to air attack, but the brigadier was in command of all operations ashore. This assignment of authority placed the greatest responsibility for the safety of the expedition and its ships on the individual—the naval commander—who alone controlled the means of evacuating the comparatively small force of soldiers.

d. **Composition of Task Force.**—The composition of the task force indicates that careful consideration was given to the problem of providing a carefully balanced group that could handle all phases of the mission. The largest element of the force, except for the infantry, consisted of engineers, who were charged with carrying out the main object of the task—demolitions. An adequate number of signal troops were also to seize, operate deceptively, and finally destroy the Spitsbergen radio stations.

The inclusion of free Norwegian troops was a factor that tended to give greater validity to the mission in the eyes of the Norwegian residents, who had to stand by and see their property destroyed at a time when it was not under control of the enemy nor facing direct threat of attack.

e. **Security—Secrecy.**—From beginning to end the greatest secrecy was observed in carrying out the mission. During the early stages the expedition was treated as a training exercise, and the troops did not learn where they were going until they were well out to sea, and then only on the evening before the land-

ing. This circumspection precluded any possibility of a leakage by gossip that might have imperiled the whole task force.

f. Security at Sea.—During the most dangerous part of the voyage the troop transport was safeguarded by an aircraft carrier and land-based aircraft patrols, as well as by the three destroyers, so that it could have maximum protection against air attack. When distance had reduced the danger from German bombers, the aircraft carrier left the expedition and two cruisers joined the destroyer escort as replacements. The cruisers and the destroyers were the best type of vessels to deal with a possible opposed landing and to safeguard the transport in evacuating the Russians to Archangel.

g. Signal Operations.—Two phases of signal operations contributed a great deal to the security of the expedition: the maintenance of radio silence by the naval units during the voyage, and the transmission of deceptive weather reports from Spitsbergen as a means of discouraging aerial reconnaissance by German air units.

Chapter 4

BRITISH LESSONS FROM COMMANDO OPERATIONS

Summary of Lessons

	<i>Paragraph</i>
Value of raids.....	41
Choice of target.....	42
Choice of landing places.....	43
Reconnaissance	44
Size of raiding force.....	45
Sea transport.....	46
Selection of dates; tide factors.....	47
Timing.....	48
Naval plan.....	49
Air plan.....	50
Land-force plan.....	51
Training and rehearsals.....	52
Security.....	53
Clothing and equipment.....	54
Recognition at night.....	55
Action after landing.....	56
Arrival at home.....	57
Publicity.....	58

41. Value of Raids.—The moral effect of a raid usually counts far more than any material success it may achieve. If the material effect is important, the moral value will rise sharply; but even if no material success is gained, the moral value may still be high. Unless a raid is undertaken for reconnaissance purposes only, the most important object should be

These lessons and conclusions are the result of British experience and did not come from the sources used for the other material in this bulletin; hence they are reproduced in a separate chapter.

to assure contact with enemy troops, and the target chosen should be of sufficient importance to make this a reasonable certainty. On the other hand, there must be no risk of a complete failure. The moral effect of one fiasco will outweigh that of several successful raids. Therefore, the target must not be one guarded by a formidable enemy force.

42. Choice of Target.—Actually, the target itself need not be of great importance. Not only is it very difficult to do really substantial material damage in the short period of a raid, but it will often be far more important to secure information and capture prisoners, etc. In fact, the main object of every raid should be to inflict casualties and gain information, and any targets allotted should be regarded mainly as guides on which to focus the attacks.

The following is the procedure recommended for choosing targets:

(1) Select an area of the enemy's coastline about which one has good information as to hostile strength and dispositions.

(2) Select a section within this area which may be approached without detection from the sea, and on which it is possible to land.

(3) Prepare a list of targets which lie in this section within a mile of the coast. Discard those which will probably be too well defended or which contain a strong concentration of troops, as well as those which probably have no troops at all.

(4) Of the remainder, select those which are:

(a) Within range of a suitable landing place;

(b) Easy to find;

(c) On the fringe of a troop concentration area.

(5) Finally, other things being equal, pick the one which is nearest the sea.

43. Choice of Landing Places.—At this stage, the Navy should be consulted; and possible targets should be examined in the light of facilities for a surprise approach from the sea and a landing in calm water. The latter is an absolute necessity, although it usually increases the difficulty of effecting surprise. Sheltered waters are usually enclosed in a bay or in the lee of islands, so that the ships run a risk of being spotted as they approach and intercepted as they return. There may also be protecting mine fields. Therefore, avoid any landing places which cannot be approached safely from several different directions.

It is not necessary, at this stage, to decide upon the actual landing points in detail, but the sailors and soldiers must, respectively, be satisfied that selected areas are possible for landings and that practical land routes exist from beaches to targets.

44. Reconnaissance.—Discreet photographic reconnaissance of the selected areas should be arranged, and all possible information about them should be collected from every source. It will usually also be necessary to land an agent or a reconnoitering officer to get last-minute information and to test actual landing facilities.

It is assumed, throughout this report, that the enemy coast is patrolled by aircraft and that landings will have to take place at night. Unless there is some very obvious landmark, the Navy cannot be expected to make so accurate a landfall in the dark

that the boats can be beached at the exact points chosen for the landings. The land-force plan must be sufficiently elastic to cope with landings made at the wrong places.

45. Size of Raiding Force.—It will usually be found that the “military coat has to be cut according to the naval cloth.” The soldier must, of course, estimate the smallest number of troops which can do the job, but the upper limit will usually be set by the carrying capacity of the available boats. Incidentally, inferiority in numbers is less important in a night raid. The exit from each landing place and the routes from it to the target will usually limit the numbers that can be employed. Overcrowding at bottlenecks in the dark is one of the things to be avoided.

46. Sea Transport.—The whole operation can be carried out in oceangoing motorboats, starting from a shore base or from a parent ship well outside the coastal zone; or ships must be brought close inshore and troops transferred to landing craft carried in the ships—either rowboats, motorboats, or specially designed landing craft. The distance of the target from the nearest shore base will settle the choice.

If the target is within the range of motorboats, and suitable craft of this type are available, there are many advantages in using them. They are fast and unobtrusive, and they offer poor targets for aircraft, guns, or mines. Furthermore, they reduce to a minimum the time taken to disembark and re-

embark, and enable simultaneous landings to be made at widely separated points. This probably constitutes the greatest advantage which motorboats have over ships. Their disadvantages are that they make a good deal of noise and require a calm crossing. Suitable motorboats must be shallow-draft with protected propellers, so that they can be run ashore and then backed off with reversed engines. Some Royal Air Force crash boats will do this, but best of all is the Higgins "Eureka." Most of these boats carry 20 to 30 troops and have a minimum range of 200 miles. The range of motorboats can, of course, be increased by operating them from a ship out at sea. The procedure is for the unloaded motorboats to follow the ship out to a point where they close in, refuel, and embark their troops. Thus they are able to start their tactical mission with full operating range.

If the distance is too far for motorboats, a fast ship will have to be found, a naval escort provided, and some satisfactory means devised for transporting troops from ship to shore. The latter requirement presents considerable difficulty, except on rare occasions when a ship, specially fitted to carry landing craft, is made available for the raid. The next best thing is to try to find a fast ship whose davits can be adapted to carrying motorboats of the "Eureka" type. Only as a last resort should rowing ashore be tried. Raiding parties will seldom have time to use this means of locomotion, but if it is forced upon them, it will be better to transport the

troops in the escorting naval vessels and avoid using a troopship.

47. Selection of Dates; Tide Factors.—The first combination of suitable moon and tide will usually fix the date of the operation, within a normal range of three consecutive days. As a calm sea is essential, the first of these three days should usually be selected, in order to leave two alternative days in case of bad weather.

The moon will help most when it is due to rise on the landward side soon after the raiding party is ashore. This will allow the ships and boats to approach in complete darkness, with landmarks faintly silhouetted against the glow which precedes the rising moon. Later the raiders will be advancing into an increasing glow of moonlight, which will help to show them the way and make a silhouette of an approaching enemy. Finally, the moon will still be low enough during the rest of the night to let the ships get away in comparative darkness.

Favorable tide conditions are more a matter of choice and will vary with different types of coast, though it is generally better to land on a rising tide. The reembarkation should also be timed to take place on a rising tide. The Navy will usually want to land at high tide when the boats can be brought well up to the shore, and a landing at high tide will certainly get the troops to their objective and away again quicker. But there are many advantages in a low-tide landing, not the least of which is the surprise ele-

ment. The military commander will do well to consider this type of landing before accepting the naval plan. The defensive arrangements at night—fixed lines of machine guns, etc.—will usually be designed to catch landing parties somewhere near the high-water mark. Accordingly, if the landing is made at low tide there will be a fair chance of accomplishing, without interference, the critical task of disembarking troops from the boats. In such a landing there may even be space to assemble before the advance and to maneuver in order to flank likely machine-gun posts. The farther out the tide, the less chance there will be of the landing being seen or heard by the normal shore posts, and the risk of running into underwater entanglements is reduced to a minimum. The chief disadvantage of a landing at low tide is the loss of time; it may add as much as a mile of distance to the beach and troops will have to wade in from the boats and back.

48. Timing.—The timing will depend on whether the whole raid is to be completed during one night or whether the troops are to remain ashore for the day and be taken off the following night. In a thickly garrisoned country with good communications, such as northern France, it will be necessary, as a rule, to take the raiders off the same night; and in the following paragraphs it will be assumed that this is to be done. In such cases it may be taken as a rough guide that ships must not be within 12 miles of the coast during daylight. A naval calculation will give

the earliest possible time for the landing and the latest time at which troops have to be reembarked. The land-force plan must be designed to fit between these two limits, which do not usually allow the troops ample time ashore. On a short summer night in the Channel there may be as little as three hours left after allowing for disembarkation and reembarkation. It will be unsafe to allow less than an hour for each mile to be covered ashore. The time schedule should also allow generously for unforeseen delays.

49. Naval Plan.—Once the decisions discussed above have been made, the naval plan can be drawn up. In addition to covering all of these points, it will name the craft in which the troops are to be transported and the place and times of embarkation. It will cover also the composition and action of the naval escort, and will usually give a rendezvous at sea, within striking distance of the coast, from which the actual approach to the landing places will start. Finally, it will lay down arrangements for signals between ships and shore.

50. Air Plan.—During a night raid, there will not be much chance for air cooperation with the troops ashore, and the chief role of aircraft will be to protect the ships. It may therefore be necessary to include the air plan in the naval plan. The air plan, however, in addition to covering the protection of ships on both the outward and homeward passages, will include details of any offensive action to be

taken against the enemy defenses ashore, before and after the raid.

For the outward passage, it will probably be sufficient to put shore-based aircraft at the call of the naval escort for the remaining hours of daylight. The maximum air protection is likely to be needed at dawn next day, and it may be necessary to send out fighters to meet the returning ships, and to have more standing by on call if needed.

For each operation, the pros and cons of a bombing attack before the landing will have to be carefully balanced. Though a well-timed air raid will unsteady the defenders and drive them into their shelters, it will keep them awake and may put them on the alert. If the raiders can get ashore undetected on a quiet night when there is no sign of anything unusual, they are more likely to achieve a cheap success. Aircraft can, however, make a very useful contribution toward surprise by drowning the noise of a landing, especially when high-speed motor-boats are used. However, if this expedient is to be used, it is essential that an "educational" flight should be made for several nights beforehand, always at the same hour and covering a wide frontage of coast. By this means the enemy will soon get used to hearing a regular air patrol and think nothing unusual of it on the night of the operations. Once the troops have landed, any air attacks will be most usefully directed against hostile "E-boat" and destroyer bases in order to prevent enemy craft from putting to sea and intercepting the raiding vessels.

The value of smoke screens in covering landings and reembarkations must also be considered.

51. Land-Force Plan.—The land-force plan must follow the naval and air plans. Its preparation in detail should be delayed as long as possible, for it must be based on last-minute information. As late intelligence arrives, alterations may have to be made in the naval plan; and only when this is in its final form can the land-force plan be completed. The plan will detail troops to the craft allotted by the Navy, assign the precise landing places for each group of boats, and lay down the objectives for each landing, as well as the routes to it and the routes to the points chosen for reembarkation. Precise instructions must be set out for signals between the troops and the ships and boats. The preparation of a good land-force plan will depend very largely on the quality of photographs which the Air Force can produce.

One of the main considerations in drawing up the land-force plan will be to insure a safe line of withdrawal back to the boats. The simplest method, of course, is for the troops to go back along the way they came and reembark at the landing place; but if a good coast road exists, this method invites the risk of being cut off. The necessity of keeping open a line of retreat imposes caution on the advance of the most dashing troops. The alternative is, after the mission has been completed, to continue the advance to another beach for a rendezvous with the boats. This method removes from the minds of the troops

any fear of being intercepted, and gives them a goal generally straight ahead and a set time by which to reach it. It is economical in men, saves time, and enables the raiders to take the defenses of the embarkation beach from the rear; but the method involves some serious risks. The raiders may, during the course of the raid, run into unexpectedly strong defenses and fail to penetrate them; or the boats may get into difficulties and fail to reach the right place at the right time. Certainly it is the more ambitious plan, and it will rely for success very largely on good communications. Radio telephone from the troops to the boats will usually be needed. Whatever reembarkation method is used, a single boat should never be allocated to a landing place by itself. The boats should always be kept in pairs or threes, in case of accidents.

Before the land-force plan is completed, the controversial matter of the best type of landing place should be discussed. The Navy will very naturally wish to select the steeply shelving sandy beach of the text-book, as their task is to land the soldiers safe and dry, with their arms and equipment. The leader of a raiding party will, on the other hand, be well-advised to avoid such a landing place, for it will certainly have drawn the close attention of the defense. He should explain clearly to the sailors that the troops will expect to get wet, and that he would rather risk losing a man or two by drowning than have to disembark his men under machine-gun fire. It is largely a matter of training the troops.

If all are quite prepared to swim if necessary, and are able to climb on to rocks, then there will always be a fair chance of getting ashore unopposed. Once the Navy can be shown, during training, the unlikely looking places at which troops can get ashore, there will be far more scope for landings without casualties on a well-guarded coast. General Wolfe's discovery (with respect to the Heights of Abraham at Quebec) is as good a guide today as ever, and troops who can scramble ashore on a rocky promontory, or scale a cliff face from a small cove, will achieve complete surprise nine times out of ten. To quote one case in the present war: a British landing party, operating against Germans in north-west Europe, got ashore in a small rocky cove from which the only exit was a flight of 200 steps, cut in the cliff face, which had to be negotiated in single file. The whole party reached the top undetected and, after completing their task, were able to re-embark the same way without interference. During the course of this operation, enemy machine guns commenced sweeping a nearby "ideal" sandy bay.

52. Training and Rehearsals.—The troops and sailors detailed for the operation should meet for training as early as possible. It is very important to have the same boats and the same crews for both the training and the operation, and to keep the same group of soldiers with the same boats throughout. The sole object of the training period is to rehearse the operation under conditions approximating as

nearly as possible those which will be met during the raid. Most of the training will have to be done at night, and at times when the conditions of moon and tide will be somewhat like those required for the landing. Every effort should be made to rehearse the landing on a piece of coast which is like the one chosen for attack. To prepare for the land action, the chief aim will be to get the raiding troops thoroughly familiar with the ground over which they are to operate. This aim can be accomplished before the troops join the sailors.

The main requirements are an early and generous supply of charts, maps, and air photographs (with enough magnifying glasses and stereoscopes), a large-scale elaborately made sand-table model, and a secluded open space, flat or hilly, depending on the target area. In this space, a full-scale replica of the target area should be constructed, roads and tracks taped out, and buildings represented. Here troops should be repeatedly rehearsed in the dark, and movements from point to point carefully timed. The success or failure of the whole operation will depend upon the rehearsing done before the operation, and every conceivable effort to achieve realism will help to assure success. During this training, a need will probably be found for various special equipment, such as scaling-ladders, special demolition apparatus, etc.; and if there are any unusual obstacles to be met—such as a sea-wall or the face of a promontory—it will be worth making full-scale models as accurately as possible for troops to practice on.. Finally,

“recognition drill” and communications with the Navy will need special attention.

53. Security.—Once training starts, the maintenance of secrecy will be a difficult problem, and a security officer and staff should join the troops as early as possible. It will be virtually impossible to conceal the fact that a landing operation is being prepared; and efforts should be concentrated only on keeping secret the date and place. There will be no need for anyone to know the date until the time comes to move to the port of embarkation; but secrecy regarding the destination will conflict with the vital necessity of familiarizing troops with the ground over which they are to operate. Air photographs need reveal nothing if the Air Force is asked to print copies without any identification marks (not even an arrow pointing north), but it will usually be advisable to print special maps with no place names marked. Maps of this kind will be needed in any case, together with air photographs, for the use of the people who are going to build the sand model. As a further precaution, maps can be printed upside down, or with the north side pointing east or west, provided the troops are told in time to correct compass bearings.

Perhaps the only real way of insuring secrecy will be to keep both soldiers and sailors in strict isolation during the rehearsal period, with no contact at all with the outside world. This will not always be possible, and it will still leave the problem of concealing the departure of personnel from the area. A

good deal of ingenuity will be needed to accomplish a secret departure. Any mass exit by troop train, etc., must be avoided. Men can be trickled away and down to the port of embarkation over a period of two or three days, both by road and rail, sometimes in uniform and sometimes in plain clothes. Once at the port, the strictest isolation is essential. Khaki-clad figures on board a naval vessel will give the game away to the whole dockyard, and troops should either be marched on board, dressed as sailors, or dribbled in with the dock workers in plain clothes. Uniforms can be stowed on board in kit bags beforehand without causing comment, as can arms and ammunition, etc. At sea, no troops in khaki should be allowed on deck during daylight, as they will give clear warning of an impending landing to any hostile aircraft which spots them.

Once on board ship, all secrecy can be abandoned and the men told exactly where they are going. They should also be assigned a rendezvous, a time, and a signal for use on the night after the operation in case any man is left behind and there is a chance to evacuate him. Every man should be instructed beforehand on his behavior in case of capture, and it will be well to insure, at the last moment, that none are carrying diaries or informational documents of any sort.

When the time comes for the actual landing, silence will be the most important thing of all.

54. Clothing and Equipment.—At sea, each man will need one of the naval-pattern inflatable lifebelts, which he will have to wear throughout the operation.

Raiding parties should receive these early enough to get used to them during training.

The clothing and equipment of the landing party must be reduced to the minimum, and special foot-gear will be needed to suit the type of landing place. Every man will have to be prepared to swim with his uniform, arms, and minimum equipment. Very little ammunition will be needed at night, and no man will need more than one weapon and a few grenades. Steel helmets are heavy and apt to be noisy, though very useful for recognition purposes (they make familiar silhouettes). Shorts are useful in good weather, and a loose blanket, which can be thrown away if necessary, is the best protection against cold. Bicycles will be useful in some places. They should be of the very lightest civilian type with everything possible removed—mudguards, bells, lamp-brackets, etc. They can be bought second-hand and abandoned when the time comes to re-embark. Finally, nothing should be worn which will show up in the dark, except the agreed recognition signals.

55. Recognition at Night.—Recognition in the dark will be one of the greatest difficulties, particularly when the time comes for reembarkation. By this time, the withdrawing raiders will probably be mixed up with hostile beach patrols, and enemy craft may have got among the boats. A password is some help but no real solution, as men have to get very close to recognize the password above the noise of waves,

etc. Flashing of lights is far too dangerous, except by a few selected leaders; and, incidentally, it will be well to insure during the sea passage that the men have no unauthorized flashlights. The best means of recognition is some very distinctive head-gear, or an agreed arm signal. Another system which has been tried is to issue to the men a pair of small white discs made of plywood, to be tied on to the belt in front and behind. These discs are made either square, round, or triangular, so that the recognition mark can be changed for each operation.

56. Action after Landing.—Action after landing will, of course, vary with every task and every terrain, but it will generally follow well-defined stages:

- (1) Getting from the highwater mark to the mainland.
- (2) Finding the way to the target and overcoming opposition en route.
- (3) Dealing with the target.
- (4) Getting back to the beach.
- (5) Finding the boat.
- (6) Getting aboard.

The first men ashore should guard the flanks of the landing close to the water and stay in position as long as the boats are there. Their task is to deal with beach patrols and to prevent the enemy from giving the alarm. They should carry submachine guns but avoid any firing if possible. The Germans have a habit of patrolling the beach with small parties of cyclists who approach very silently and keep close to the water's edge where the wet sand provides

good going. They provide the best chance to capture prisoners, as they can be upset, knocked on the head, and bundled into the boats at leisure without interfering with the progress of the raid.

The next men ashore should establish the exits from the beach. They should be armed with light machine guns. The main body can then follow and make for the target, posting sentries along the return route as they go. Wherever they cross a road they will have to leave detachments to establish road blocks and to ambush motor vehicles which run into them. These detachments will need submachine guns and coils of wire to make a very quick block. They should be as strong as possible, as they may well encounter more enemy troops than will any other element of our forces. Some of the sentries should have light machine guns. The main body will be working mostly at close quarters and will need submachine guns and grenades as well as explosives. It should provide for its own local security throughout the operation.

By the time the raiders start work on the target, the commander will have a good idea as to how long it will take them to get back to the boats, and can calculate exactly when to order the withdrawal. His main preoccupation will be to coordinate the withdrawal. The main body should go first, followed by its rearguard. This rearguard will collect the sentries and road-ambush detachments en route, and, finally, will call in the men covering the beach exits. The flankguards at the water's edge will go last. The

whole success of the withdrawal will depend on good drill and rehearsing and, above all, on efficient "recognition" drill. Throughout, there should be as little shooting as possible, at least until the whole of the inland party is back on the beach.

While the raiders are ashore, the boats should be a short distance out at sea to avoid being spotted; as a result, they may be difficult to find on the return. If necessary, the raiding party may have to call for light signals from the boats. Once on board, the main danger will be air attack. If motorboats are used, aircraft may discover them by seeing their wash; but they are unlikely to see a motorboat which has heaved-to or is moving very slowly. In any case, fire should be withheld until daylight, unless a boat is actually attacked. Antitank rifles should be ready on motorboats for use against "E" boats.

57. Return.—A good many reception arrangements will be needed at the home port, and an officer should be left behind to make these. There should be medical arrangements to receive casualties, escorts to take off prisoners, and baths and hot breakfasts for the troops. They will need accommodations near at hand where they can get some rest before returning to their stations.

In all raids it will be important to get prisoners, and there should be enough spare accommodation in the boats to allow for them. Their evacuation and embarkation during a raid will always be difficult but will be well worth-while, and its importance should be

impressed on the troops. Intelligence officers should always accompany the expedition in order to confront prisoners on the return passage, while they are still suffering from the shock of capture. If no prisoners are taken, efforts should be made to carry off dead bodies. Not only are these valuable for intelligence purposes, but the defenders are influenced when they find men vanishing in the night without trace. If neither prisoners nor bodies are evacuated, the jackets or blouses should be stripped off enemy casualties, as they will often furnish identifications and contain papers in the pockets.

58. Publicity.—Publicity will play a very big part in exploiting the moral value of a raid. Although this publicity should stick to true facts, it should exploit the results of the raid as much as possible. It is essential to make an announcement early, before the enemy has time to issue a communique. The opponent who gives the story first is more likely to be believed, as he automatically forces the other side to take the defensive. The communique can be drafted in general terms before the operation, and completed and issued immediately after receipt of a telephone message from the commander of the expedition. This telephone call should be the commander's first job on landing, after assuring himself that all his boats are in. It is difficult to exaggerate the importance of good publicity. It may easily extract great moral effect from a raid which achieves few concrete military results.