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B.R. 1806

THE NAVAL WAR MANUAL

1958

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1. The Most Important Single Factor in War

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B.R. 1806

The Naval War Manual

Reprinted 1961

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TACTICAL AND WEAPONS POLICY DIVISION

ADMIRALTY

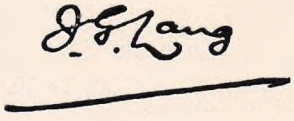
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10*th December*, 1958

T.S.D.277/57

B.R. 1806 (Restricted) *The Naval War Manual*, 1958, having been approved by My Lords Commissioners of the Admiralty, is hereby promulgated.

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By Command of Their Lordships,



AMENDMENTS

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CHAPTER 1

Introduction

> "Our new Navy is preparing now; it can scarcely be said, as regards its material, to be yet ready. The day of grace is still with us—or with those who shall be the future Captains and Admirals. There is time yet for study; there is time to imbibe the experience of the past, to become imbued, steeped, in the eternal principles of war, by the study of its history and of the maxims of its masters. But the time of preparation will pass; some day the time of action will come."
>
> Mahan: *Naval Administration and Warfare* (1888)

Purpose of the Book

1. This book is primarily intended for the education of junior Naval Officers. Its aim is to give them some basic knowledge of the position of the United Kingdom in the world; of the defence organisation of the United Kingdom and how this fits in with the defence organisations of the other members of the British Commonwealth and with those of its Allies; of the Principles of War; and of the nature of Maritime Warfare.

2. The book by itself does not provide the answer to any specific problem; it is neither a book of instructions nor a technical handbook. But the basic knowledge which it contains is a necessary background for further education in the subject of Maritime Warfare, in which every Naval Officer should be well versed.

Experience and Study

3. Success in any walk of life depends mainly on sound professional knowledge: such knowledge can be acquired in two ways—experience and study.

Happily, knowledge of Maritime Warfare is not always obtainable from practical experience. In peacetime, therefore, Naval Officers must seek to obtain the maximum benefit from exercises, from tactical games and from the day-to-day problems of their life at sea.

4. Fools never learn from experience; most men learn from their own experience; successful men learn from the experience of others. The experience of others is recorded in history books and in biographies and memoirs of great men. Naval Officers should therefore supplement the knowledge gained from their own experience by the study of history.

The Services are often accused of spending their time preparing for the last war instead of for the next. Such criticism must never be allowed to stifle study and discussion of the past, for the lessons of the past point the way to preparation for the future.

5. Critical study of the policies and actions of statesmen and Military, Naval and Air leaders in past wars will reveal the reasons for their successes and failures; from these reasons will emerge the unchanging fundamental principles of war, the correct application of which has led to success. But if the fundamental principles are unchanging, the methods of applying them vary according to circumstances and to technical developments. The task of the student is not, therefore, merely to learn the fundamental principles; it is the far more difficult task of assessing how these principles should be applied in the light of changed circumstances and technical advances. There is no simple way of finding the

answers. The application of principles based on such matters as geography, national characteristics and human reactions will probably change less than that of principles relating to strategy and tactics. In every aspect of Maritime Warfare, vital lessons can be learnt from history; but the application of these lessons to modern conditions requires thought, intelligence and foresight.

Plan of the Book

6. GENERAL BACKGROUND. The first part of this book is devoted to general background information on the United Kingdom's defence commitments, on the British Commonwealth and on international relations and organisations. International organisations possess no sovereign power over their member nations; this power rests with the governments of the member nations who act collectively or individually as they wish.

7. The Government of the United Kingdom is responsible for the security of this country, her colonies, dependencies and other overseas interests, for the protection of her merchant shipping and civil aircraft, and for the defence of some small countries with whom treaties have been concluded. These considerations strongly influence British defence and foreign policy and the size of the British armed forces.

8. Under present-day conditions, national security requires participation in international organisations; while these organisations cannot dictate national policy, their decisions provide an important part of the background against which national policy is determined. An understanding of these organisations is therefore essential.

9. PRINCIPLES AND STRATEGY. The second part of the book sets out the Principles of War, which have been distilled from the experience of past conflicts, and then discusses strategy and the possible types of wars in the present nuclear age.

10. MACHINERY FOR CONDUCTING WAR. The third part of the book describes the British National Defence Organisation and follows it down through the Admiralty to the system of command in the Royal Navy. This part also discusses Regional Defence Organisations and deals with the N.A.T.O. Military* Organisation and Command System.

11. MARITIME WARFARE. The main theme of the book is contained in Part IV, which sets out the fundamental aims of British maritime strategy, the courses of action to achieve these aims, the types of operations undertaken and the forces required to carry out these operations. No attempt is made to give a blue-print for any particular operation, but these chapters show the principles which govern the conduct of all maritime operations.

This part concludes with a brief discussion of the important subjects of Naval Administration and Logistic Support.

12. THE PERSONAL FACTOR. The final chapter is devoted to Morale, Leadership, Training and Discipline. In spite of all the advances of science and technology, wars are still, and always will be, won by the men and women who create and wield the weapons. The spirit which drives a nation, and the individuals of which it is composed, along the road to victory is known as " Morale ". The creation of morale depends upon a way of life, and Naval training therefore starts by developing the necessary qualities to create a spirit which, fostered by professional knowledge and wise leadership, will never accept defeat.

* In this connection, the word " military " refers to all armed forces and not merely to armies.

Throughout his career, and particularly when engaged in academic study (as, for example, when reading this book), the Naval Officer must never lose sight of the importance of the human element. The stories of defeated nations have shown time and again the fate which awaits those leaders who pay insufficient attention to morale; conversely, wars have been won against seemingly impossible odds by nations whose people have been imbued by their leaders with a resolute spirit.

Maritime Warfare

13. The reader will have noticed above the use of the term " Maritime Warfare ". Until the Second World War, it was customary to speak of operations at sea as " Naval Warfare ". Developments in aircraft, particularly their greatly increased range and endurance, have now made it practicable for shore-based aircraft to play a direct or indirect part in almost every phase of operations at sea; indeed, the co-operation of shore-based aircraft is often vital to the success of an operation.

In some countries, e.g., the United States of America, shore-based aircraft operating over the sea are part of the Naval forces; in others, including Britain, such aircraft form part of the Air Forces. So far as Britain is concerned, therefore, most operations at sea are now the joint concern of the Navy and the Royal Air Force, though the Navy is normally the predominant partner. In recognition of this, such operations are now termed " Maritime Operations ", and the war at sea is known as " Maritime Warfare ".

The adjective " Naval " is reserved for matters which are the exclusive concern of the Royal Navy (e.g., Naval Discipline, Naval Establishments).

Types of Wars in the Nuclear Age

14. Throughout history, wars have tended to become more and more widespread as the size and mobility of armed forces, and the power of their weapons, has increased. Another factor in this process has been the growing inter-dependence of nations, arising from the greater volume of international trade which has developed as communications and transport have improved.

The process culminated in the two world wars of the present century in both of which the greater part of civilisation was involved.

15. Since the Second World War, the United States of America and the Soviet Union have emerged as the two leading world powers. These two nations alone have the financial, industrial and manpower resources necessary to wage a full-scale war with modern weapons, the cost, complexity and destructive power of which far exceeds anything previously known. It therefore appears certain that any future war on the scale of the two previous world wars will involve both the United States of America and the Soviet Union.

It is, however, possible that smaller wars may occur in which only other nations are involved or in which neither the United States of America nor the Soviet Union are fully or overtly committed.

16. To clarify planning, the British Chiefs of Staff have approved the following definitions:

Global War is defined as unrestricted conflict between the Soviet Union and her allies on the one side and the United States of America and her allies on the other.

Limited War is defined as any international armed conflict short of Global War. Such conflicts would be limited geographically and possibly in the weapons employed, though nuclear weapons may or may not be used.

17. Since the end of the Second World War, the Soviet Union has sought to extend her influence by supporting subversive and " nationalist " movements in countries outside her immediate control; this imperialistic policy has been disguised under the ideological appeal of Communism, and Communist parties and movements in the countries concerned have therefore been the main instruments of the Soviet policy. This policy has inevitably created a protracted state of international tension, which has become known as " The Cold War ". The Cold War is basically an ideological conflict and will continue so long as the Soviet Union persists in her expansionist policy, which has world domination as its ultimate aim.

The Cold War is therefore defined as the continuing world-wide struggle between Soviet Communism and the Free World, waged by all means short of international armed conflict. It includes subversive activities, civil wars and insurrections inspired by the basic ideological conflict (e.g., Malaya, Indo-China).

The role of the Royal Navy in Global, Limited and Cold War is discussed in Part IV.

PART I—GENERAL

CHAPTER 2

United Kingdom Defence Commitments

" A defence plan, if it is to be effective and economical, must be based on a clear understanding of the military responsibilities to be discharged."

' Defence—Outline of Future Policy ' (Cmnd. 124—April, 1957)

Responsibility for Defence

1. The ultimate responsibility for the defence of the United Kingdom rests with the Government of the day. The Government decides on a foreign policy which is within the country's power to follow and also decides what proportion of the national income is spent on defence (see Chapter 6, paragraphs 1-8). The possible threats to the country must be balanced against the standard of living of the people and the choice made between " guns and butter "; further, the relative importance of the possible threats, and the order in which they are to be guarded against, must also be determined.

2. Defence is not solely a matter of providing armed forces; it also involves joining International organisations and making treaties, conducting relations with other countries, and developing the economic strength and education of the country. It is also important for the Government to maintain a reasonable standard of living, so that the population will wish to defend their way of life and will not be deceived by the blandishments of an aggressor.

Defence Commitments

3. Defence cannot be confined to the prevention of bombardment or invasion of the United Kingdom. The destruction or interruption of merchant shipping would soon lead to starvation and to lack of means to prosecute a war. Further, the best policy in many circumstances will be to adhere to treaties and alliances for mutual defence. The United Kingdom has many colonies and dependencies which are unable to defend themselves and has also contracted a number of treaties to protect minor states in return for various concessions in those states. The United Kingdom's ties with other countries of the British Commonwealth are so strong that it would generally wish to help them if they were attacked.

4. The United Kingdom's defence commitments are therefore world-wide. They can be classified into the following groups:—

(*a*) Defence of the United Kingdom.

(*b*) Defence of the Colonies and other overseas dependent territories.

(*c*) Defence of small countries, for which the United Kingdom is responsible by treaty.

(*d*) Defence of Merchant Shipping plying to and from the United Kingdom, the Colonies, Protectorates and Protected States.

(*e*) Assistance to other members of the Commonwealth.

(*f*) Responsibilities under the Brussels Treaty (Western Union), the North Atlantic Treaty (N.A.T.O.), the Baghdad Pact and the Manila Treaty (S.E.A.T.O.).

(*g*) Responsibilities as a member of the United Nations Organisation.

5. Defence of the United Kingdom. The defence of the United Kingdom is now largely integrated with the North Atlantic Treaty Organisation. Certain British forces (e.g., Fighter Command R.A.F.) will be retained under direct national command for the close defence of the country; these forces will be commanded in war by the Commanders-in-Chief (United Kingdom) (see Chapter 7, paragraph 31).

6. Defence of the Colonies and other Overseas Dependent Territories. Each colony is responsible for its own local defence, but would clearly need assistance from the United Kingdom if it become involved in a major conflict. Moreover, any colony may in peacetime need assistance in dealing with internal subversion (e.g., Malaya, Kenya, and Cyprus), or threats of aggression from neighbouring states (e.g., Guatemala's designs on British Honduras, the claims of Argentina and Chile for the Falkland Islands Dependencies).

7. Defence of Small Countries for which the United Kingdom is Responsible by Treaty. In return for various concessions, the United Kingdom has undertaken by treaty to be responsible for the defence of a number of small countries, mainly in the Middle East. The concessions usually involve either trading facilities or the right to station British forces in the countries concerned. Countries with whom such treaties exist include Iraq, Bahrein, Kuwait, and the Aden Protectorate (which should be distinguished from the colony of Aden). The treaty with Jordan was ended in 1956 at Jordan's request and British forces have been withdrawn from the country.

8. Defence of Merchant Shipping. The United Kingdom depends on merchant ships, both her own and those of other countries, to bring food, fuel and raw materials from Commonwealth and foreign countries, and to carry back, in payment, the products of her industries. In war, this dependence is emphasised, since merchant ships bring in supplies essential for the war effort and the survival of the population, and take out troops and munitions needed in overseas theatres.

The defence of merchant shipping in the North Atlantic area is now integrated in the North Atlantic Treaty Organisation. The United Kingdom remains responsible, however, for the defence of shipping in her coastal waters (see Chapter 10, paragraphs 22-24) and outside the area covered by N.A.T.O.

9. Assistance to Other Members of the Commonwealth. This is dealt with fully in Chapter 3. Briefly, there is no formal Defence Treaty binding members of the Commonwealth, nor is there any supreme Commonwealth Defence Organisation. There is, however, a continuous exchange of defence information between the members and it is likely that other members would come to the assistance of a member who was attacked.

10. Responsibilities under Regional Pacts. The purpose of Western Union, N.A.T.O., the Baghdad Pact and S.E.A.T.O. is to offer collective resistance to further expansion by the Soviet Union. It was recognised that only by presenting a united front could the countries of the Free World successfully prevent their piecemeal absorption, and only by pooling their military strength could they hope to offer successful resistance to Soviet aggression.

This subject is considered in more detail in Chapters 4 and 10.

11. Responsibilities as a Member of the United Nations Organisation. As a member of U.N.O., the United Kingdom may be called upon to take action, including military action, to preserve world peace.

This is discussed in more detail in Chapter 4.

Liaison with the United States of America

12. The United States is by far the most powerful of Britain's Allies and it is important to maintain close collaboration with her on defence matters. To this end, a British Joint Services Mission is maintained in Washington and functions in much the same way as do the Commonwealth Services Liaison Missions in London (see Chapter 7, paragraph 37), i.e., the Chairman of the Mission represents the British Chiefs of Staff's views to the United States Chiefs of Staff, and vice versa.

United Kingdom Defence Policy

13. British defence policy takes account of all these commitments; if they are beyond the capacity of the armed forces which, in the opinion of the Government of the day, the country can afford, then some of the commitments have to be reduced.

This is a matter for decision by the Government who, after considering all the factors, formulates the current Defence Policy. This is revised and re-stated annually in a White Paper known as the Statement on Defence. A quotation from the 1957 statement heads this chapter.

CHAPTER 3

The British Commonwealth of Nations

" The Government will seek to maintain and foster close co-operation in defence matters generally with members of the Commonwealth."
'Defence—Outline of Future Policy' (Cmnd. 124—April 1957)

The Commonwealth

1. The British Commonwealth of Nations is an association of free and independent member states, and their dependencies. These dependencies may be Colonies, Protectorates, Protected States (i.e., a territory with its own ruler but over whose foreign relations and defence a Commonwealth Government exercises control) or Trust Territories (i.e., ex-enemy territory administered by a Commonwealth government on behalf of the United Nations); they are part of the Commonwealth but cannot be described as " members " of the Commonwealth.

2. The Commonwealth has no written Constitution, its members being bound together by a community of ideals and interests springing from the common historical background that all members were at one time under British rule; this has left a common heritage of democratic government basically modelled on the system of government of the United Kingdom.

3. The status of member nations was defined by the Declaration of the Imperial Conference of 1926, and legal effect to this was given by the Statute of Westminster in 1931.

The Declaration and Statute between them provided that:—

(*a*) Member nations " are autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations ".

(*b*) Dominions could at will repeal or amend acts of the United Kingdom government applying to themselves.

(*c*) The United Kingdom Parliament can legislate for a Dominion only at the request and with the consent of the Dominion concerned.

The complete independence of the Dominions (as they were then called, though this expression is now falling into disuse) was thus firmly established.

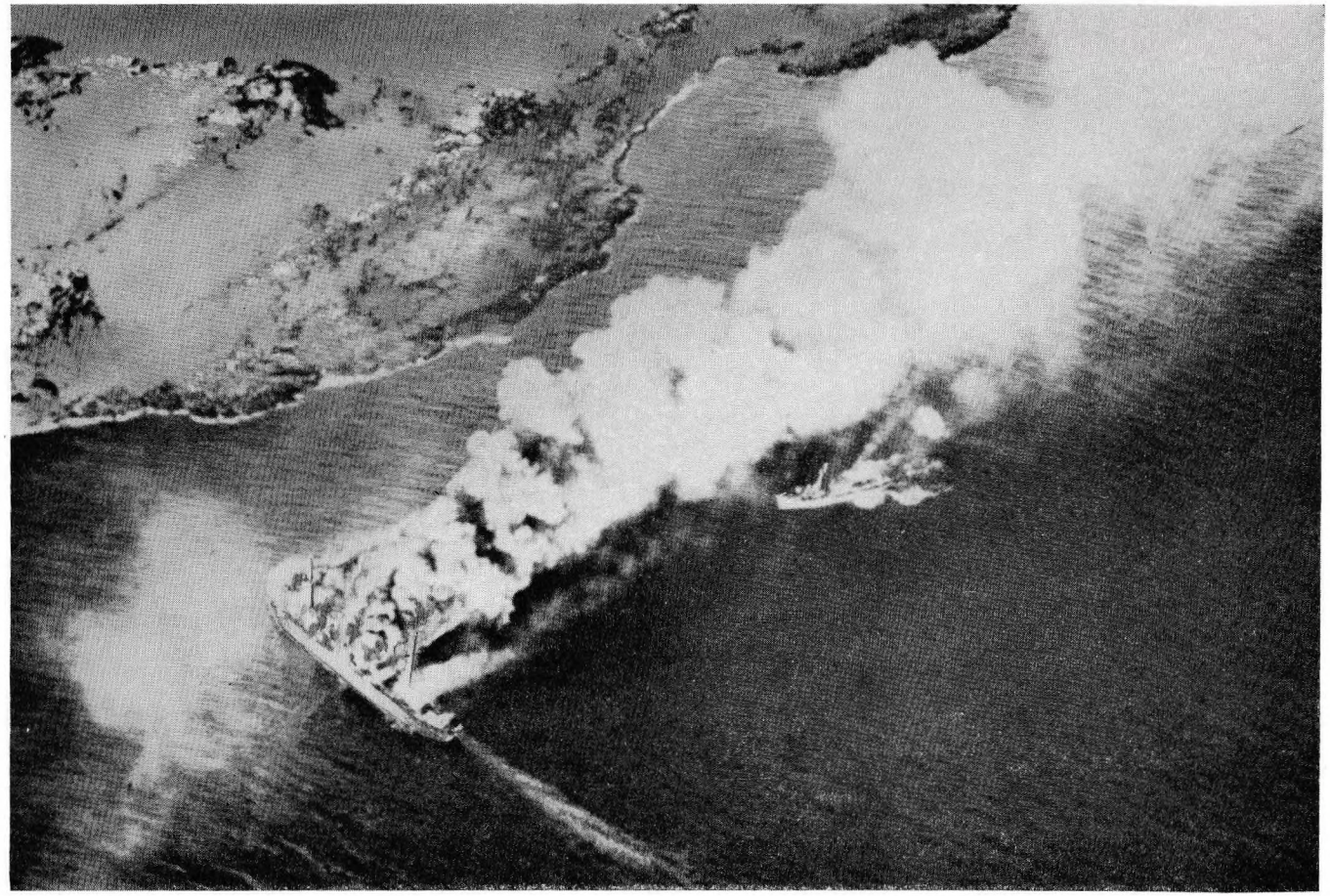
4. The nations which, with the United Kingdom, originally formed the Commonwealth were Canada, Australia, New Zealand, the Union of South Africa, the Irish Free State (now Eire) and Newfoundland. But since the Statute of Westminster, the nature of the Commonwealth has changed. The relationship originally known as *Dominion Status* is extremely flexible. It varied to some extent even with the original members of the Commonwealth; and with the inclusion of new members it has varied, and will continue to vary, even more.

5. It has long been recognised in British colonial policy that territories under British rule will be granted the status of independent nations when their peoples have acquired the necessary education and development in political, economic and industrial affairs.

In recent years the advance of colonial territories towards independence, through increasing degrees of self-government, has been accelerating.



2. Commonwealth Chiefs of Naval Staff at *Exercise Fairlead*—April 1957



3. Naval aircraft attack on a German troopship in Norwegian waters

6. Of the original members of the Commonwealth, Eire became a republic in 1937, and in 1949 ceased to be a member of the Commonwealth. In 1934 the constitution of Newfoundland was suspended at her own request for financial reasons, and her affairs placed largely under the direction of the United Kingdom Government; in 1949 Newfoundland (with her dependency Labrador) became a province of Canada.

7. In 1947, India and Pakistan, and in 1948, Ceylon, were granted Dominion status. In 1950, India, and in 1956, Pakistan, declared themselves republics, while remaining members of the Commonwealth; they accepted the Sovereign as head of the Commonwealth, but ceased to owe allegiance to the Queen as head of their state.

The Gold Coast Colony (Ghana) and Malaya achieved independence in 1957. The Central African Federation (Northern Rhodesia, Southern Rhodesia and Nyasaland) has been granted a large measure of independence and is now responsible for virtually all its own affairs except for international relations and a number of other matters which remain under the control of the United Kingdom Government.

It is likely that some other Colonies, which now have varying degrees of internal self-government, will attain full independence before long.

8. Members of the Commonwealth conduct their own foreign relations, are free to enter into treaties or pacts with foreign nations as they wish, and can seek membership of the United Nations Organisation. By its nature, members are free to leave the Commonwealth if they wish.

The Status of the Population

9. Each member of the Commonwealth defines the citizenship and nationality of its own people, and determines the status of other Commonwealth nationals within its own boundaries.

By the British Nationality Act, 1948, every citizen of the United Kingdom and her colonies, and every citizen of a member nation of the Commonwealth, has also the status of *British subject* and may be known as a British subject or as a Commonwealth citizen. However, not all members of the Commonwealth have accepted for their citizens the additional status of British subject.

10. Eire, though no longer a member of the Commonwealth, is not regarded as a foreign country by the members of the Commonwealth. Although Ambassadors, not High Commissioners, are exchanged, relations with the United Kingdom are still conducted through the Commonwealth Relations Office, not the Foreign Office. By the laws of Eire, her citizens are not British subjects; but by the laws of the United Kingdom and other Commonwealth countries, many Irish citizens are still entitled to this status if associated with a Commonwealth country by service, residence or descent.

Exchange of Representatives

11. The Ministers of the Governments of Commonwealth Nations (except the Republics) have the right of direct access to the Sovereign as the head of their state. As it is impracticable for the Queen in person to perform in all Commonwealth countries those functions which she performs in the United Kingdom, she is represented by a Governor-General.

The Governor-General is the personal representative of the Sovereign, by whom he is appointed on the advice of the Ministers of the country concerned; he is neither the representative of, nor responsible to, the Government of the

United Kingdom. The Governor of a Colony, on the other hand, represents both the Sovereign and the United Kingdom Government.

12. The United Kingdom Government is represented in the countries of members of the Commonwealth by a High Commissioner, who is analogous to the British Ambassador in a foreign country. Similarly, members of the Commonwealth are represented by High Commissioners in the United Kingdom, and in other Commonwealth countries.

13. Members of the Commonwealth, as sovereign states, have the same power to appoint Ambassadors and Ministers to foreign countries as has the United Kingdom. The Ambassadors and Ministers of those members which recognise the Queen as head of their state are " Her Majesty's Ambassador (or Minister) " and receive letters of credence signed by the Queen.

In practice, not all members of the Commonwealth are represented in all countries in which the United Kingdom is represented; in such cases, the United Kingdom's diplomatic representative may, by arrangement with the Governments concerned, act also for one or more Commonwealth countries. Similarly, Commonwealth countries may appoint their own Consuls in foreign countries, or they may rely on the United Kingdom's consular representatives.

Defence

14. Each member of the Commonwealth is responsible for its own defence and that of its dependencies; there is no formal defence treaty between all the members of the Commonwealth, nor is there any supreme Commonwealth defence organisation. Co-ordination in the defence of the whole Commonwealth can therefore be achieved only by consultation and agreement.

Commonwealth countries have agreed in principle that defence is a matter of common interest; that, while the primary concern of each member is its own local defence, the defence of merchant shipping and civil aircraft concerns all members; and that uniformity of organisation, equipment, and training of the armed forces should be practised to facilitate co-operation.

15. All Commonwealth countries are members of the United Nations Organisation and thus have an obligation, under its charter, to contribute towards the preservation of international peace and security. They are free to enter into regional security pacts with other countries and thus to accept defence obligations within their own spheres of interest (e.g., Australia and New Zealand have signed the A.N.Z.U.S. treaty with the United States of America for the defence of the South West Pacific).

16. The armed forces of Commonwealth countries are entirely distinct from those of the United Kingdom. The forces of those which acknowledge the Queen as their Head of State (i.e., all members who are not Republics) are known as " Her Majesty's Forces " and carry the prefix " Royal " (e.g., Royal Australian Navy); ships of these navies are " Her Majesty's (Australian) Ships ". (The forces of the Union of South Africa are an exception.)

These forces are nevertheless subject, in all matters, to the legislation and direction of their own governments and service ministries. This does not preclude the attachment of units of one Commonwealth navy to a command belonging to another Commonwealth navy, and such attachments are frequently arranged between the governments concerned. Nor does it preclude the exchange or loan of personnel, and all Commonwealth navies still rely, to a varying extent, on the training facilities of the Royal Navy, particularly those of a specialised or advanced nature.

17. To facilitate the exchange of information on defence and service topics in general, Liaison Officers from each of the armed forces are appointed by Commonwealth countries to the United Kingdom, and vice versa. These Liaison Officers, and their staffs, are attached to the offices of their respective High Commissioner (for their duties see Chapter 7, paragraph 37).

Consultation

18. It is clearly impracticable to frame a single policy for the whole Commonwealth, whether in foreign affairs, defence or any other matter. What is necessary, and is the task of Commonwealth statesmanship to achieve, is that the policies and actions of member nations of the Commonwealth should be harmonised as far as possible. This can only be secured by continuous consultation on matters of common concern. By the nature of the Commonwealth, no centralised authority with executive power could be set up, as no government or parliament could surrender its own responsibilities to any central body.

19. Personal contact is the most effective method of consultation and at the highest level this is achieved by periodical conferences of the Prime Ministers of Commonwealth countries. Conferences of departmental ministers (e.g., Finance, Defence) are also held from time to time. To meet the particular need for consultation on Commonwealth defence in the Far East, the United Kingdom, Australia and New Zealand have formed the A.N.Z.A.M. Defence Committee. This Committee consists of the Australian Defence Committee, and the United Kingdom and New Zealand Liaison Officers.

High Commissioners in the various Commonwealth capitals meet to exchange views, as do Commonwealth representatives at the United Nations. On day-to-day matters there is a constant flow of telegrams and correspondence between the Commonwealth Relations Office and Commonwealth Governments and the former acts as a " clearing-house " for information within the Commonwealth.

CHAPTER 4

International Relations and Organisations

> " The defence of Britain is possible only as part of the collective defence of the Free World."
>
> 'Defence—Outline of Future Policy' (Cmnd. 124—April 1957)

Historical background

1. Throughout history, nations have waged war on other nations, often for the purpose of increasing their wealth and power by territorial conquest. Military alliances of two or more countries were formed for mutual security against a potential enemy, or where the interests of such countries made concerted action expedient. Such alliances usually lasted only for so long as circumstances demanded.

2. The twentieth century has seen a marked change in the whole concept of international relations. The change has come with the scientific and technical developments of the last few decades, which have brought improved communications and facilities for travel. The growth of world trade has brought the benefits of industrialisation and a higher standard of life to hitherto backward and undeveloped countries, who have thus justified a voice in world affairs, and the prosperity of most countries is now dependent on a complex web of commercial and economic links with other countries. The affairs of one nation are today of more concern to the rest of the world than they ever were in past centuries.

3. Just as arguments and differences of opinion occur between men, so must disputes and quarrels occur between nations—for the affairs of nations are the affairs of men. During the twentieth century, with its record of two world wars, all nations have come to realise that a war, once started, will tend to spread, just as a fire will do if measures are not taken to confine it. So most nations have come to the conclusion that disputes and quarrels must be settled by negotiation if possible.

The League of Nations

4. The first attempt to create an organisation for the preservation of world peace was the formation of the League of Nations in 1920. By the Covenant of the League, member nations agreed not to employ force for the settlement of a dispute until they had submitted the matter to the League of Nations, or to independent arbitors or judges. Over fifty nations, some three-quarters of the whole world, joined the League. Although the idea of the League was originally conceived by President Wilson of the United States of America, the isolationist faction gained control of the country, and the United States, though sympathetic to the principles of the League, never became a member of it.

5. The League of Nations succeeded in settling some minor political disputes, and through the medium of subsidiary organisations set up under it, some international co-operation was achieved in humanitarian, social and health matters. The Permanent Court of International Justice was established at the Hague for the settlement of legal disputes; now known as the International Court of Justice, this court is still in existence today as an organ of the United Nations Organisation.

But the League failed in its main aim of preserving world peace because some of the major powers did not wish it to succeed.

It was unable to prevent Japanese aggression in China in 1931, German re-armament in defiance of the Versailles Treaty, and the Italian conquest of Abyssinia in 1935. Germany and Japan withdrew from membership in 1933, and during the late 1930s it became apparent that the League of Nations had become an ineffective body; it was disbanded on the outbreak of the Second World War in 1939.

The United Nations Organisation

6. During the Second World War, thoughts naturally turned to the type of organisation which could be set up after the war to preserve world peace. In 1944 the four great powers allied against Germany and Japan (the United States of America, the United Kingdom, the Soviet Union and China) drew up tentative proposals, and the Charter of the United Nations Organisation was finally agreed upon and signed by fifty nations at San Francisco in June, 1945. Membership of United Nations Organisation has since increased to about eighty countries.

7. The United Nations has six principal organs—the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the International Court of Justice and the Secretariat.

The Charter distinguishes between the functions of the General Assembly and the Security Council by placing on the latter the " primary responsibility " for the maintenance of peace, and precluding the former, whose functions in other respects are very wide and general, from dealing with that subject in a way which might embarrass the Security Council.

8. The specific functions of the General Assembly, which consists of all the members of the Organisation, are to discuss any matter within the scope of the Charter and to make recommendations thereon either to the members of the United Nations or to the Security Council or to both; but this is subject to the proviso that it must refer to the Security Council any question relating to international peace on which action is necessary, and that it may not make any recommendation on a dispute or situation which is being dealt with by the Security Council.

The General Assembly also approves the Organisation's budget and apportions the expenses among the members.

It takes its ordinary decisions by a simple majority vote, but if a question is " important ", a two-thirds majority of the members present and voting is required. " Important " questions include the election of the non-permanent members of the Security Council, the admission of members and the budget.

9. Apart from its control over the budget, all the General Assembly can do is to discuss and recommend and initiate studies, and consider reports. It cannot *act* on behalf of all the members, as the Security Council does, and its decisions are not directions telling the member states what they are or are not to do. It has to rely on co-operation among the members, and not on power, for it has no powers.

10. The Security Council consists of five permanent members—China, France, the Soviet Union, the United Kingdom and the United States—and six other members elected by the General Assembly for a term of two years. Its functions are laid down in Article 24 of the Charter in these terms:—

> " In order to ensure prompt and effective action by the United Nations, its members confer on the Security Council primary responsibility for the maintenance of international

peace and security, and agree that in carrying out its duties under this responsibility the Security Council acts on their behalf. In discharging these duties, the Security Council shall act in accordance with the Purposes and Principles of the United Nations."

Article 25 then provides that:—

" The members of the United Nations agree to accept and carry out the decisions of the Security Council in accordance with the present Charter."

11. These provisions confer on the Security Council powers which far exceed those possessed by any organ of the League of Nations, or by any of the other organs of the United Nations.

The extent of these powers made the method by which the Security Council reached its decisions a matter of crucial importance, and the Great Powers soon made clear that they would not consent to be bound by decisions arrived at without their concurrence. They therefore insisted on a privileged voting position. Decisions of the Security Council require the affirmative votes of seven members, but these seven votes must include the concurring votes of all the five permanent members. Consequently, each of the five Great Powers (the United States of America, the United States of Soviet Russia, the United Kingdom, France and China) has a " veto " on decisions, and this must be borne in mind when estimating the real significance of the Security Council's powers.

One important consequence of this limitation of the Security Council's powers is that, if the Council fails (because of a veto) to act on an apparent threat to peace, the General Assembly can *recommend* (by the two-thirds majority required for important quesitons) collective measures including the use of armed force; such a recommendation would only be effective if enough of the member nations wished to make it so. This procedure was followed in the Suez crisis of November, 1956, and led to the formation of the United Nations Emergency Force to patrol the armistice line between Egypt and Israel.

12. The Economic and Social Council consists of eighteen members elected by the General Assembly, and it is virtually a committee of that body. Its functions are the promotion of economic and social progress, of international cultural and educational co-operation and of respect for human rights and fundamental freedoms.

The Trusteeship Council consists of equal numbers of member nations who do, and those who do not, administer trust territories. Its functions are to consider the annual reports for each trust territory, and generally to keep informed of the activities of the administering nations.

The Secretariat is practically an international civil service, and it is as necessary to effective international co-operation as a national civil service is to a national government.

13. There are also, under the United Nations, a number of " Specialised Agencies ", which are organisations established by inter-governmental agreements in the economic, social, cultural, educational, health and related fields. They include the International Labour Organisation (I.L.O.), the Food and Agriculture Organisation (F.A.O.) and the World Health Organisation (W.H.O.).

14. The United Nations Charter is concerned more with the prevention of war than the establishment of a world government. The United Nations Organisation is not a " super state " to which members surrender their sovereignty; it attempts, under the Charter, to maintain peace through collective action, which may include the use of force.

Member nations agree to attempt to settle their differences by negotiations before referring a dispute to the United Nations Organisation, but it is recognised that they may resort to force if an acceptable solution cannot be found; in such a case, the United Nations Organisation will try to localise the conflict. The United Nations Organisation is, in effect, a co-operative organisation, the success of which depends on the support of the majority of nations, and particularly on the support of the Great Powers.

15. Although the Charter envisaged that the United Nations Organisation would have military forces at its disposal, no agreement has yet been reached on the establishment of such forces.

On occasions when military action has been taken, the Organisation has had to rely on forces being contributed by member nations for the specific purpose envisaged, e.g., the United Nations Emergency Force mentioned in paragraph 11.

Regional Organisations and Security Pacts

16. The principle of " Regionalism " is accepted in the United Nations Charter; the idea is that countries with common interests should group together for the promotion of the general welfare and friendly relationship of their peoples. Military alliances and security pacts do not strictly come within this meaning, yet they are recognised by the United Nations Charter as being a first step towards " regional organisations " in the fullest sense. Further, the Charter recognises the inherent right of nations to individual or collective self-defence, and thus collective security pacts are fully in accordance with the Charter of the United Nations. The Charter does, however, stipulate that no enforcement action can be taken under regional arrangements unless authorised by the Security Council.

17. The United Kingdom is a member of three regional security pacts—the North Atlantic Treaty Organisation, the Baghdad Pact and the South-East Asia Collective Defence Treaty Organisation. The largest and most powerful is the North Atlantic Treaty Organisation.

The North Atlantic Treaty Organisation

18. With the formation of the United Nations Organisation in 1945, and the final defeat of Germany and Japan, hope spread throughout the world that a prolonged era of peace lay ahead. Unfortunately, this hope was not fully realised. The defeat of Japan and Germany had left a vacuum of strength to the east and to the west of the Soviet Union and it was soon apparent that the Soviet Government was bent on an expansionist policy backed by military strength and the ideological appeal of Communism.

19. The western nations had withdrawn the bulk of their armed forces from Europe within a short time after the end of the war and had reduced their military strength to peacetime needs as rapidly as possible. The Soviet Union had maintained her armed forces in considerable strength. One by one the countries of central and eastern Europe came under Russian domination.

20. THE BRUSSELS TREATY. To counter the threat of further Russian expansion, five countries of western Europe (the United Kingdom, France, Belgium, Luxembourg and the Netherlands) signed a treaty of mutual assistance at Brussels in March, 1948. Six months later a military agency, the Western Union Defence Organisation, was formed to co-ordinate the defence contributions of the treaty powers.

21. The Brussels Treaty and Western Union soon became the nucleus of a larger alliance covering the whole North Atlantic area. After preliminary talks between representatives of the governments of the countries concerned, the North Atlantic Treaty was signed on the 4th April, 1949, by twelve nations—Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States of America. Greece, Turkey and Western Germany have since joined the Alliance.

22. THE NORTH ATLANTIC TREATY is a short document (see Appendix B). By its terms the signatories have pledged themselves to maintain peace and security, and to promote stability and well-being, in the North Atlantic area in conformity with the United Nations Charter. They agree that armed attack against one or more members shall be considered as an attack against them all, and that to assist members attacked each member shall take " such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area ".

It should be noted that members are not explicitly compelled by the Treaty to use armed force to assist other members attacked. In this respect the Brussels Treaty (which Italy and Western Germany joined in 1954) is a stronger instrument, as by its terms the signatories definitely agree to go to war if other signatories are attacked.

23. The area covered by the North Atlantic Treaty comprises the territory in Europe of any of the members, North America, Turkey, the Algerian Departments of France and the Atlantic area north of the Tropic of Cancer.

24. The North Atlantic Treaty is not exclusively a military alliance. Though it was born of collective insecurity, the member nations recognise that they have joined a community of nations in which co-operation in all fields should be developed.

25. THE POLITICAL AND CIVIL ORGANISATION (Diagram 1). The Supreme political authority of N.A.T.O. is the *North Atlantic Council.* This body meets at least three times a year *at ministerial level,* when each member government is represented by ministers particularly concerned with the business under discussion (e.g., Defence, Finance or Foreign Ministers). During the remainder of the year, the Council is in permanent session at N.A.T.O. Headquarters in Paris and each country maintains there a permanent representative with authority to speak for his government. The United Kingdom's permanent representative receives his guidance and instructions from the British Government.

26. The North Atlantic Council has no supra-national powers; all its decisions must be unanimous.

27. The Council is served by an international staff and secretariat under the *Secretary General,* who is responsible for organising the work of the Council. The Secretary General acts as chairman of the Council except when it meets at ministerial level.

28. The task of the Council is to direct the activities of N.A.T.O. in all fields—political, military and economic—and to co-ordinate, where necessary, the contributions of individual members. It determines, by agreement, the forces which each member shall make available, in peace or war, to the organisation, and the money which each shall contribute towards the cost of items common to all members. It provides the military authorities with political guidance on which to base their plans and dispositions. Generally, it provides a forum where

all questions of policy can be discussed in order to reach solutions satisfactory to the members concerned.

29. The Council is assisted by a number of Committees, which may be permanent or temporary. Examples are:—

(*a*) Military and Civil Budget Committee.
(*b*) Planning Board for Ocean Shipping.
(*c*) Planning Board for European Inland Shipping.

30. THE MILITARY ORGANISATION. The Military Organisation of N.A.T.O. is described in Chapter 10.

PART II—PRINCIPLES

CHAPTER 5

The Principles of War

" Every principle contains in itself the germs of a prophecy."
S. T. Coleridge

1. Man has eternally sought a formula which would guarantee success in war. No such formula has been found, because war is not an exact science in which definite causes lead to calculable results. War is often described as an art, but this is not the whole truth. It is part art and part science, and its nature defies precise definition. All that can be said is that it is a form of human activity, involving conflicting interests, in which the issue is solved by the use of force.

2. Although no formula can be laid down for success in war, study of history reveals that there are certain principles which, if followed, are likely to lead to success. Most human activity is governed by principles, and war is no exception.

3. The Principles of War are neither scientific laws nor the rules of a game. They are guides to conduct, which, when instilled in the mind, will assist in deciding the right course of action in war. The principles of war are not, for example, like Newton's laws of motion, from which scientific calculations leading to firm predictions can be made. They are more akin to the principle of action of all ball games " to keep one's eye on the ball ", which if followed will lead to greater success than if ignored.

4. History shows that these principles of war have remained unchanged although the nature of war has greatly altered. They applied as much in the Battle of the Atlantic in the Second World War as in the Defeat of the Spanish Armada in 1588. There is therefore every indication that the principles are independent of technical advances. The course of a future war cannot be accurately predicted; it has been said that " the only certain thing about the next war is that our conception of it is wrong ". Principles which do not change are therefore of great importance.

5. Opinions of great commanders and of military writers vary on what the principles of war actually are. These differences of opinion are, however, mainly of degree and of nomenclature rather than of fundamental belief, but some authorities disagree about which principles are of sufficient importance to be included.

The principles given in this manual are those most generally agreed upon and which the British Chiefs of Staff approved at the end of the Second World War as a basis for common doctrine throughout the services. These principles, which are enlarged upon in the following paragraphs, are:—

(*a*) The Selection and Maintenance of the Aim.
(*b*) Maintenance of Morale.
(*c*) Offensive Action.
(*d*) Security.
(*e*) Surprise.
(*f*) Concentration of Force.
(*g*) Economy of Effort.
(*h*) Flexibility.
(*i*) Co-operation.
(*j*) Administration.

6. Selection and Maintenance of the Aim. In the conduct of war as a whole and in every operation of war, it is essential to select and clearly define the aim. The ultimate aim is to break the enemy's will to fight. Each phase of the war and each separate operation must be directed towards this supreme aim, but will have a more limited aim, which must be clearly defined, simple and direct. Once the aim is decided, all efforts must be directed to its attainment until a changed situation calls for a re-appreciation and consequently a new aim. Every plan or action must be tested by its bearing on the chosen aim.

At any given time, a commander should have only one aim. He may have, in addition, one or more tasks but these must not prejudice attainment of the aim. The aims of junior commanders must always contribute to the aims of their next superiors.

The selection and maintenance of the aim is the " Master Principle " and has therefore been placed first.

The remaining Principles are in no particular order, since their relative importance will vary according to the nature of the operation in question.

7. Maintenance of Morale. Success in war depends more on moral than on physical qualities. Numbers, armament and resources cannot compensate for lack of courage, energy, determinations, skill and the bold offensive spirit which springs from a national will to conquer. The development and subsequent maintenance of the qualities of morale are therefore essential to success in war.

Probably the greatest single factor in obtaining high morale is good leadership, which inspires confidence in the Command. The provision of modern equipment, sound training and good administration are also important.

8. Offensive Action. Offensive action is the necessary forerunner of victory; it may be delayed, but until the initiative is seized and the offensive taken, victory is impossible.

In war, the attacker has the advantage. He has time to make plans, specify objectives and dispose his forces. The defender has little or no time to appreciate what is happening, has lost the initiative and must conform to the attacker's actions.

This principle does not mean " attack at any price ". A defensive course may at times be essential; but no opportunity of regaining the initiative should ever be missed. Offensive action is also important to the Maintenance of Morale.

9. Security. A sufficient degree of security against enemy attack is essential in order to obtain freedom of action to launch an offensive in pursuit of the selected aim. This entails adequate defence of vulnerable bases and other interests vital to the nation or the armed forces.

Security does not imply undue caution and avoidance of all risks, for bold action is essential to success in war; on the contrary, with security provided for, unexpected developments are unlikely to interfere seriously with the pursuit of a vigorous offensive.

War is essentially a matter of taking calculated risks; the principle of Security demands that all risks should be foreseen and either accepted or guarded against. It is not a breach of Security to take risks; but it is a serious breach not to realise they are being taken.

10. Surprise. Surprise is a most effective and powerful influence in war, and its moral effect is very great. Every endeavour must be made both to surprise the enemy and to guard against being surprised.

By the use of surprise, results out of all proportion to the effort expended can be obtained; in some operations where other factors are unfavourable, surprise may be essential to success.

Surprise can be achieved strategically, tactically or by the use of new weapons or material. The elements of surprise are secrecy, concealment, deception, originality, audacity and rapidity.

Due to the development of detection devices, absolute surprise is becoming more and more difficult to achieve against an alert enemy. The use of diversions and feints to mislead the enemy has therefore become of greater importance.

11. CONCENTRATION OF FORCE. To achieve success in war, it is essential to concentrate superior force, moral or material, to that of the enemy at the decisive time and place. The more an enemy can be out-numbered or out-manoeuvred in a particular action, the more likely is he to be defeated.

Concentration does not just mean a massing of forces. It implies having forces so disposed as to be able to unite to deliver the decisive blow when and where required, or to counter the enemy's threats or attacks.

12. ECONOMY OF EFFORT. Economy of Effort implies a balanced employment of forces, and a judicious expenditure of all resources with the object of meeting the needs of both Concentration and Security.

This Principle does not mean that one should try to achieve results " on the cheap "; this would be dangerous and is contrary to the principle of Concentration. Economy of Effort really means that the best possible use must be made of the forces and resources available; these will never be enough to meet all needs.

13. FLEXIBILITY. Modern war demands a high degree of flexibility to enable pre-arranged plans to be altered to meet changing situations and unexpected developments. This entails good training, organisation, discipline and staff work, and, above all, that flexibility of mind and rapidity of decision on the part of both the Commander and his subordinates which ensures that time is never lost. It calls also for physical mobility of a high order, both strategically and tactically, so that forces can be concentrated rapidly and economically at decisive times and places.

In short, flexibility is the capacity to compete with a rapidly changing situation and to seize fleeting opportunities.

Flexibility is inherent in maritime warfare, and the mobility of maritime forces is their most valuable asset.

14. CO-OPERATION. Co-operation is based on team spirit and entails the co-ordination of all units so as to achieve the maximum combined effort from the whole. Above all, goodwill and the desire to co-operate are essential at all levels.

The increased interdependence of the Services on one another and on the civilian war effort has made co-operation between them of vital importance in modern war.

Co-operation between two forces or units in war often makes it possible to achieve something which neither could achieve independently.

Another important aspect of this principle is the need for co-operation in dealing with an unforeseen situation. The ability to see the other man's point of view, and to relate it to one's own, is an essential preliminary to true co-operation.

15. ADMINISTRATION. The Administrative arrangements of a force (i.e., the provision of supplies of all kinds and the management of units) must be designed to give the Commander the maximum freedom of action in carrying out his plan.

Every administrative organisation must be simple and well understood.

Every operational commander must have a degree of control over the administrative plan for his sphere of command corresponding to the scope of his responsibilities for the operational plan.

In short, this principle means that careful attention must be paid to everything which a force requires to keep it efficient and in fighting trim; the operational commander must know what the administrative arrangements are so that he can take them into account when drawing up his plans.

Application of the Principles of War

16. The Principles of War govern all activities from the formulation of Allied Grand Strategy down to the tactical handling of a minor war vessel. They are not just an academic subject, suitable only for discussion by senior officers; their application must be studied by every officer as a practical aid to professional efficiency.

17. However fully the principles may be absorbed, and however readily they spring to mind when required, there remains the problem of deciding how much emphasis to place on each to meet the needs of a particular situation. It is the ability to vary the emphasis correctly to accord with changing conditions which is the hall-mark of the successful commander.

To make a correct decision, a commander must have a complete grasp of the principles of war, as complete a picture as possible of all facts relevant to the situation, and an instructed judgment matured by experience and study. The first and last of these are qualities which he must acquire for himself; for the second requirement, his staff can give him great assistance by presenting the relevant facts in a logical sequence. The technique of this is known as " Appreciating the Situation ", which is discussed in detail in the *Naval Staff Handbook* (B.R.1984).

18. When rapid decisions have to be made, the application of the Principles of War must be automatic and instinctive. Such application can best be acquired by actual war experience, but in peacetime much can be done to train the mind by study. The inexperienced officer should think out for himself how he would apply the Principles in each and every war situation with which he is likely to be confronted; if and when one of these situations, or something similar, arises in reality, he will be prepared with an undertsanding of the correct action at the back of his mind.

19. Reference has already been made to the importance of studying history (Chapter 1, paragraphs 3-5). One cannot become a successful commander in war by reading a single textbook. Napoleon said that " the principles of war are those which guided the great commanders whose great deeds have been handed down to us by history ". He also said that " the happiest inspiration is generally only a recollection ". A study of history is therefore important, and these principles of war help to analyse the reasons for success or failure in the past.

20. The student must not think that modern war is so different from the wars of the past that nothing can be learnt from history. It is true that Hannibal's method of getting elephants over the Alps, or Nelson's tactics at the Battle of the Nile, are in themselves unlikely to be of practical value to a commander in the nuclear age. The fact remains that history contains many illustrations of both correct and incorrect applications of the principles of war.

21. In the study of past wars, the conduct of the commanders must be analysed, and the reasons for their successes and failures determined. There is little profit or merit merely in establishing that failure was due to the disregard of a certain principle; this is generally easy to do, but in itself leads nowhere. To conclude a study by assuming that the characters were just stupid is shallow and merely gives the obvious lesson that one must not be stupid.

The student must assume that an unsuccessful commander was doing his best, and, if he belonged to a nation with a doctrine of war based on sound principles, that he was accepted as being fully competent. From this hypothesis the student must try to put himself in the Commander's place and discover how and why he was misled; if the cause can be found, the student will have reconstructed for himself something of the atmosphere in which the Commander was working and he will understand what is meant by the " fog of war ". Having done so, the student must then assess what the correct action would have been, and how the Commander could have decided this. Such studies will provide valuable lessons to the future leader.

Examples of the Application of the Principles of War

22. It has already been stated that " Selection and Maintenance of the Aim " is the master Principle of War; it applies, without exception, to every operation of war. A Commander must have only one aim; any other *tasks* he may have must not prejudice attainment of the *aim*.

23. Application of Principles to the Escort of a Convoy. The aim of the Escort Force Commander (E.F.C.) will be the safe and timely arrival of the convoy; he may also be instructed to destroy any enemy forces which he may encounter. It is important to note that the latter is a *task*, which must not prejudice attainment of the aim; thus, the escort will not be justified in attacking enemy forces which are not threatening the convoy if by so doing the convoy is exposed to another enemy threat.

The Escort Force Commander's main concern is with the *Security* of the convoy; in making his dispositions, he must consider *Economy of Effort* whilst retaining sufficient *Flexibility* to be able to mount a *Concentration of Force* to meet an enemy threat. Although his aim is to defend the convoy, he must remember that attack is often the best method of defence, and he must therefore be prepared to take *Offensive Action* tactically against enemy forces, bearing in mind that such action has a favourable influence on the *Maintenance of Morale*. Since he must await the appearance of the enemy, his opportunities for attaining *Surprise* will be severely limited, but by maintaining close *Co-operation* with other Naval Forces, with shore-based aircraft and with the convoy Commodore, he may well be able to place the enemy at a disadvantage by unexpected tactics. Finally, he must have regard to the needs of *Administration* by seeing that his ships have sufficient fuel, ammunition and other supplies to carry out their tasks.

24. Application of Principles to an Attack on an Enemy Convoy. The aim of the Strike Force Commander will be the destruction of the enemy merchant ships; a task will be the destruction of the enemy escort. In this case, it may be necessary to carry out the task before the aim can be achieved; on the other hand, it may be possible to draw off some or all of the escort by a feint or diversion, thereby making achievement of the aim easier.

In such an operation, the need for *Offensive Action* is paramount, and every effort should be made to achieve *Surprise*, both in mounting the operation and in delivering the attack. In drawing up his plan of attack, the Commander must seek to attain a *Concentration of Force* on the targets by deciding the order in which each enemy ship is to be attacked and by whom. He must also remember the need for *Economy of Effort* and ensure that undue weight is not brought to bear on one target. His plan must retain *Flexibility* so that it can be adjusted to meet the needs of a rapidly changing situation. He must ensure that there is full *Co-operation* between all units of his force and with any other forces which may be supporting or taking part in the operation. Finally, he must consider the

need for the *Security* of his own force against any enemy counter-attack, bearing in mind that even if the operation is completely successful, heavy casualties in his own force would undermine the *Maintenance of Morale*. The Commander should have considered all aspects of *Administration* during the planning of the operation, taking into account such matters as the endurance of the various ships of his force at different speeds, the type of ammunition to be carried, and the expected duration of the operation.

25. Application of Principles to an Amphibious Raid. As explained later, the main purpose of amphibious raids is to impose on the enemy the need for a sustained defensive effort. In an individual raid, the aim may be to destroy some important installation (e.g., a radar station); likely tasks in such a raid would be to cause casualties, capture prisoners and damage transport facilities (e.g., bridges, railway engines).

Such an operation would probably be intended to assist in the *Maintenance of Morale* by taking *Offensive Action*. The main requirements for success are *Surprise*, so that the enemy has no chance to mount a strong defence; *Concentration of Force*, so that the aim can be achieved as quickly as possible; and *Co-operation* between all forces taking part, because success depends on each unit fulfilling its role in the overall plan. *Economy of Effort* must also be studied, so as to avoid the force becoming too large and unwieldy in relation to the aim and the expected amount of opposition. Since the force will be working to a carefully phased and dove-tailed plan, there will usually be little opportunity for *Flexibility*, though the plan should not be too rigid and should make some allowance for adjustment if the progress of the operation is either slower or more rapid than expected. *Security* will apply to the arrangements for withdrawing the force on completion of the operation. The requirements of *Administration* need careful consideration in the planning of the operation, e.g., the order of loading the landing craft, provision of special equipment, arrangements for dealing with casualties.

Common Doctrine

26. All three Services are trained in peace and led in war in accordance with the foregoing principles. The aim is to instil into leaders at all levels a common doctrine for the conduct of warfare. The existence of such a doctrine has the following advantages:—

(*a*) it guides Commanders in deciding their courses of action;
(*b*) it reduces the volume of instructions which Commanders need to issue;
(*c*) it provides subordinates with guidance on the correct course of action to take on occasions when no appropriate orders or instructions have been, or can be, issued by their superiors.

The basic common doctrine for operations by the Royal Navy is laid down in *The Fighting Instructions*.

It is important to distinguish between "a common operational doctrine" (i.e., a generally accepted system of tactical theory) and "standardised tactical instructions" (i.e., a rigid set of tactics universally applicable in specific circumstances). The former is necessary for the reasons stated above: the latter would cramp initiative, discourage flexibility, and make it difficult to achieve surprise in war; it would also inhibit the development of new tactics in peace.

CHAPTER 6

Strategy and Warfare in the Nuclear Age

> " Whatever the problem—whether it concerns our military strategy, our system of alliances or our relations with the Soviet bloc—the nuclear age demands above all a clarification of doctrine . . . History demonstrates that superiority in strategic doctrine has at least as often been the cause of victory as has superiority in resources."
>
> Henry A. Kissinger, *Strategy and Organisation*

National Policy and Strategy

1. A government has certain domestic political aims to which it is committed; such aims may be stated precisely (e.g., to nationalise the railways) or in general terms (e.g., to raise the standard of living).

The aims of a government are known collectively as its *policy*.

In order to implement policy, it is necessary to prepare *plans*. A plan is a statement of how it is intended to employ specified resources in order to achieve specified aims.

Plans are drawn up in accordance with a body of principles which specify the methods by which it is expected that the resources will be used effectively; such a body of principles is known as a *doctrine*. Thus, for example, the body of principles for the disposition and employment of armed forces is known as strategic doctrine.

2. It follows from the above that a government's policy can only be effectively implemented if:—

(*a*) the country has sufficient resources of the right type to achieve the aims specified;

(*b*) these resources are employed in accordance with sound and realistic doctrine.

3. Most countries today are not self-sufficient, and depend, to varying degrees, on intercourse with other countries. Governments are therefore unable to implement their policies by domestic action alone. Consequently, a government's policy must be divided into domestic policy and foreign policy.

The aims of foreign policy are usually determined by the government's domestic political aims.

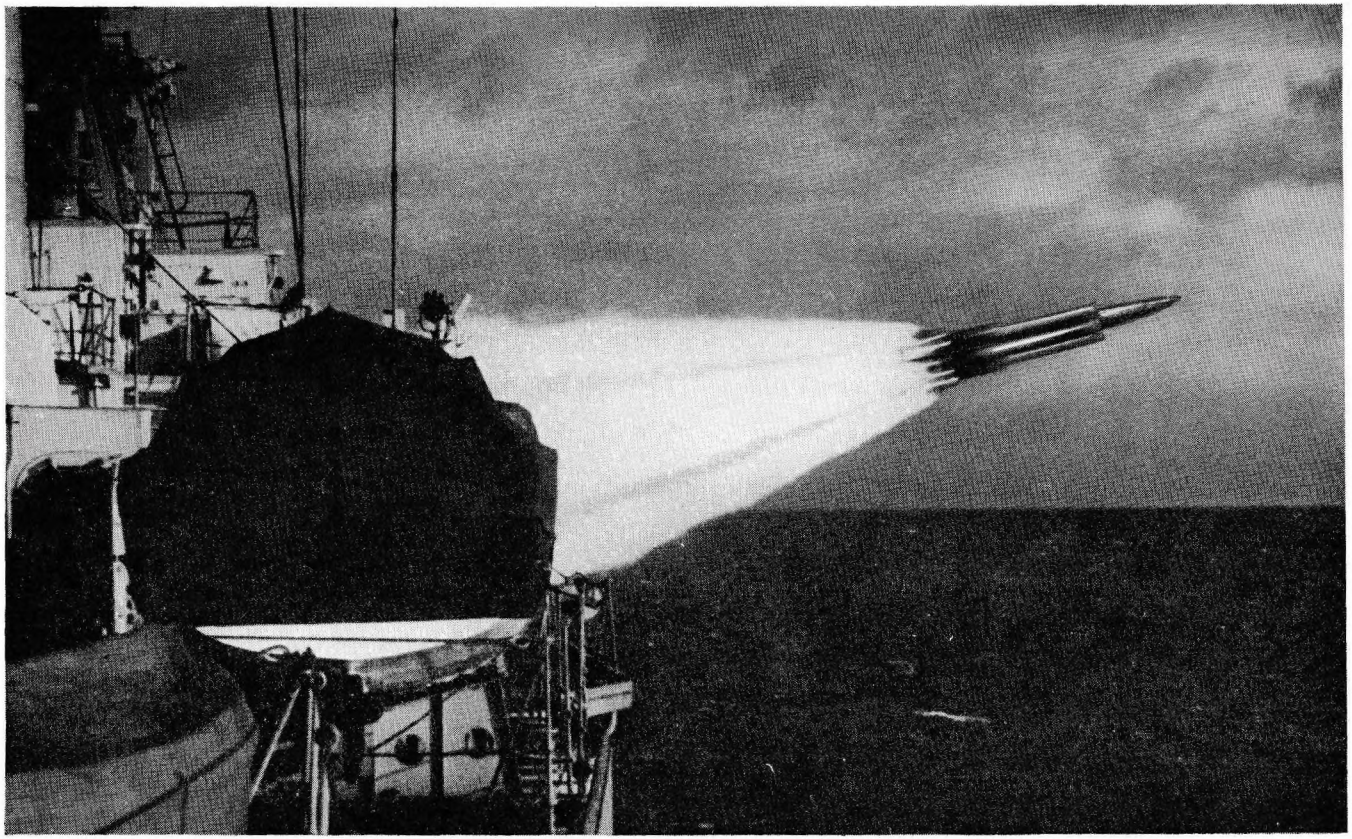
4. The rule in paragraph 2 applies equally to foreign policy. Thus, a government's foreign policy will only be sound if it can be backed by sufficient resources to ensure that its aims can be achieved. These resources include armed forces, material and financial assets and propaganda.

The provision of armed forces and the use of material and financial assets are matters of domestic policy. Foreign policy and domestic policy must therefore be co-ordinated.

5. Defence policy is those parts of domestic and foreign policies which relate to the provision and employment of armed forces.

Defence plans are statements of how it is intended to employ the armed forces in order to meet the commitments involved in foreign policy. Defence plans are based on strategic doctrine (paragraph 1) and, collectively, form *strategy*.

6. The rule in paragraph 2 applies to defence policy just as it applies to domestic and foreign policies.



4. "SEASLUG" GUIDED MISSILE BEING FIRED



5. The Operations Room at a maritime headquarters

Thus, if the commitments involved in a government's foreign policy exceed the defence resources made available by its domestic policy, the government's position will be unsound unless it modifies either its foreign policy to reduce the defence commitments, or its domestic policy to increase the defence resources.

7. If, due to changes in foreign policy or strategic doctrine, defence resources come to exceed defence commitments, the government will take steps to reduce the defence resources by appropriate modifications to domestic policy.

8. The United Kingdom Government's machinery for formulating and implementing defence policy is described in Chapter 7.

Strategy and Tactics

9. Traditionally, Strategy was concerned with the disposition of forces with the ultimate intention of bringing the enemy to action; Tactics concerned the handling of forces immediately prior to contact, and when in contact, with the enemy. Thus, the strategical arena covered the whole field of operations, whereas the tactical arena was limited to the immediate vicinity of the forces.

This traditional distinction has become less clear-cut in consequence of the greatly increased range of modern weapons, particularly aircraft and guided missiles, and of modern methods of detection, particularly radar. The distinction nevertheless remains valid; Tactics begin at the point where a Command, in pursuance of Strategy, handles forces which are capable, within their operational radius, of bringing the enemy to action. For example, Strategy may require that a Strike Force be maintained in a certain area in order to attack specified targets; the methods of mounting, and delivering, these attacks are a matter of Tactics. Tactics are dealt with in *The Fighting Instructions*.

The disposition of Maritime forces with the intention of bringing an enemy to action is known as " Maritime Strategy ".

Planes of Strategy

10. In war, strategy is considered in three planes:—

(*a*) GRAND STRATEGY. The overall plan for deploying the total resources of the Nation in pursuance of the National policy; or, when the war is being waged by an Alliance, the overall plan for deploying the total resources of the Allies in pursuance of agreed Allied policy.

(*b*) MAJOR STRATEGY. The allocation, in pursuance of Grand Strategy, of the available forces between the various theatres of operations.

(*c*) THEATRE STRATEGY. The disposition within a theatre of operations of the forces allocated in consequence of Major Strategy.

Strategy and the Forms of Warfare in the Nuclear Age

11. Chapter 1 (paragraphs 14-17) mentioned the two types of active warfare—Global War and Limited War—which may occur in the nuclear age, and also the present and continuing state of international tension known as the Cold War.

It is now necessary to consider the responsibility for formulating Strategy in these three types of warfare.

12. GLOBAL WAR. Global War is defined as unrestricted conflict between the United States of America and her Allies on the one side and the Soviet Union and her Allies on the other. It follows that the United Kingdom will not be involved in Global War except in alliance with the United States of America and other countries.

Grand Strategy will therefore be determined by the Allied Governments concerned, Major Strategy by the military directing body of the Allied Organisation and Theatre Strategy by the Allied Supreme Commanders in the various theatres.

13. LIMITED WAR. Limited War is any international armed conflict short of Global War; by definition, the arena of such a war is limited geographically. So far as active operations are concerned, therefore, the Strategy of a Limited War is determined on the third plane (Theatre Strategy) only. Nevertheless, questions of both Grand and Major Strategy arise, since it is necessary to determine what proportion of the nation's total resources should be allocated to the Limited War and what proportion should be retained both for peaceful purposes and to meet possible or potential threats in other theatres.

A Limited War may be conducted by the United Kingdom alone, or by the United Kingdom in conjunction with allies; in the first case, the Theatre Strategy would be determined by the United Kingdom Commanders-in-Chief in the area, and, in the second case, by whatever Allied Command organisation is set up for the war. Examples of active operations since 1945 which come under the definition of Limited War are the Korean conflict and the Suez operations of November, 1956.

14. COLD WAR. The Cold War is basically an ideological conflict between the "Free World" and Communism. It does not include any *international* armed conflict, but it does include civil wars and insurrections inspired by subversive Communist activities. The armed forces therefore have from time to time an active role to play in maintaining stability and suppressing these wars and insurrections.

15. The Cold War requires decisions on all three planes of Strategy, but such decisions will be governed mainly by political, rather than military, considerations. This can be illustrated by taking a particular example of Cold War activity—the operations against the Communist terrorists in Malaya. The Grand Strategy of the Cold War is based on the so-called "policy of containment"; this policy involves resisting every attempt to spread Communism whenever and wherever it appears.

The Grand Strategy therefore required that the terrorists should be defeated in Malaya, despite the extremely difficult nature of the country for military operations. In view of this difficulty, Major Strategy, from a purely military point of view, required that a relatively large force should be sent to Malaya; but the Grand Strategy required that sufficient forces be kept available to meet the possible spread of Communism elsewhere, as indeed proved necessary in Korea. So far as the Theatre Strategy was concerned, this could not be based on purely military factors, since it was necessary both to counter the Communist subversion by psychological and economic measures, and also to preserve the normal life of the country as far as possible.

16. Operations in the Cold War are therefore seldom governed by purely military considerations. Since the War is being waged mainly by ideological, psychological and economic means, counter-action is primarily taken in these fields. Military action is only taken when it is necessary to help the Civil Power to preserve internal order and security, and, even then, it is taken in addition to, and not in substitution of, the other methods of action. These other methods include propaganda (e.g., by broadcasts and through such organisations as the British Council), technical assistance (either by training local inhabitants or by the loan of British technicians and engineers), and economic assistance (by financial loans or grants, or the supply of materials).

17. The remainder of this chapter is primarily concerned with Global War, though some of the statements also apply to Limited and Cold Wars.

Phases of Strategy

18. In the past, the United Kingdom was seldom fully prepared on the outbreak of a major war because in peacetime she devoted most of her resources to maintaining prosperity by the development of trade. She was, consequently, at a disadvantage when confronted with nations who had adopted aggressive policies and had, in peacetime, devoted their resources to creating the means to implement these policies by force.

Before the advent of aircraft, this initial disadvantage was not fatal to the United Kingdom provided she had maintained a Navy strong enough to deal with any enemy invasion and to protect her merchant shipping. Safe behind her sea defences, she could build up her forces until the time came when they were strong enough to challenge the enemy on land. Moreover, her strength at sea enabled her to choose the time and place of this challenge.

19. Broadly speaking, therefore, British Strategy fell into two phases—the Defensive Phase, during which the main aims were to defend the United Kingdom and her shipping against attack and to build up her armed strength; and the Offensive Phase, during which the aim was to defeat the enemy's forces and compel him to sue for peace.

20. By 1939, however, the United Kingdom's secure position had been undermined by the development of long-range bomber aircraft and she could no longer look only to the sea and the Navy to give her protection from enemy attack. Nevertheless, it was then possible to achieve a high degree of protection against air attack; the R.A.F.'s victory in the Battle of Britain, together with the destruction or crippling of many German warships and the protection of merchant shipping by maritime forces, gave the country the breathing space traditionally provided by her sea defences alone. The phases of strategy in the Second World War therefore followed the pattern of previous wars.

21. Developments since the end of the Second World War have, however removed the possibility of the United Kingdom, in a future global war, having time to build up her armed strength whilst pursuing a defensive strategy. Thermo-nuclear and nuclear bombardment by supersonic bombers and ballistic missiles could cause such widespread destruction that the issue might be decided in a matter of days. There is at present no effective means of defence against these forms of attack.

It is therefore now necessary for the United Kingdom to maintain in peacetime strategic bombers and carrier strike forces capable of retaliating immediately against a thermo-nuclear attack on the country. This is known as the " deterrent ", because a potential aggressor is likely to think twice before launching an attack which will bring heavy retribution upon his own country. It is probable that the power of the " deterrent " will shortly be increased by the addition of ballistic missiles.

The nature of the threat, and the cost of maintaining the " deterrent ", have led the United Kingdom and other countries of the Free World to take the unprecedented step of setting up international military command systems (such as that of N.A.T.O.) in peacetime. The united front which the Free World is able to present by virtue of these alliances adds appreciably to the influence of the deterrent.

22. Despite the deterrent, a global war may break out in any of the following ways:—

(*a*) by extension of the area of a limited war, consequent on miscalculation of the effects of particular operations;

(*b*) by the Soviet Union appreciating that her best chance of achieving her aim of world domination lies in resort to active hostilities;

(*c*) by the United States of America, in consultation with her major allies, appreciating, rightly or wrongly, that the Soviet Union is about to embark on hostilities against herself or another nation of the Free World.

23. At no time in the past has the course of a war been accurately predicted. However, current planning assumes that a global war would open with a mutual thermo-nuclear and nuclear bombardment on a large scale, each side seeking to destroy the other's offensive capacity and will to resist. If either side succeeded in doing so within a matter of days, the military issue would be decided virtually outright and subsequent hostilities would be limited to mopping-up operations and to physical occupation of the defeated countries.

The bombardment may, however, be inconclusive and be followed on land by a period of reduced activity during which each side would take measures for survival and recovery.

24. At sea, the war may open with a Soviet submarine and mining campaign against merchant shipping on an unprecedented scale. The course of this campaign may be little affected by the mutual thermo-nuclear bombardment, and it may in itself threaten the United Kingdom with defeat. An important aim both during the bombardment and, if it is inconclusive, subsequently, will therefore be to protect merchant shipping at sea against the submarine and mine threats, and thereby preserve the merchant ships for future use.

25. The course of a global war subsequent to an inconclusive mutual bombardment cannot be foreseen. In general terms, it may be expected that each side will continue the fight with the best means at its disposal and that the victory will ultimately go to whichever is able to carry on in superior strength.

The National War Effort

26. Up to the start of the present century, wars were largely a matter for professional fighting men, and the majority of the civilian population was not directly involved in the conflict. War could thus be employed as an instrument of national policy without totally disrupting the normal life of the country, though the economic effects, due to higher taxes and interference with trade, were always considerable.

27. The great scientific and technological developments of the past hundred years, and the increases in population which have accompanied them, have brought about a fundamental change in the conception of war as an instrument of national policy. The vastly increased range and destructive power of modern weapons, and the very much larger forces which belligerents can produce, have extended the area of the battlefields to cover countries, if not continents. In modern warfare, the whole civilian population is involved to an extent unknown since the Middle Ages.

28. A global war will therefore involve every branch of national life; the armed forces will need additional manpower, and at the same time the nation's industry must be kept going to supply munitions and equipment. Farmers must produce as much food as possible in order to reduce the amount which has to be imported. Shipping must continue to flow in order to bring in supplies and to deploy forces, equipment and materials to theatres where they are needed. It is essential to have rapid and flexible arrangements for mobilising the nation's resources for war, but it takes time to convert the peacetime industrial production organisation to the needs of war and to establish the country on a war footing.

Readiness for War

29. The United Kingdom organisation for ensuring the maximum practicable degree of readiness for war is described in Chapter 7. There are, however, two important factors in this organisation which may be mentioned here:—

(*a*) INTELLIGENCE. It is essential to have continuous and timely intelligence of the activities and intentions of potential enemies, and of the strength and capabilities of their armed forces.

(*b*) RESEARCH AND DEVELOPMENT. In the present age, the influence of science on weapons and methods of warfare is paramount. Every effort must therefore be made to ensure that British weapons and equipment, and the methods of using them, are up-to-date and in no way inferior to those of potential enemies.

These two factors assume particular significance during a prolonged period of international tension which may ultimately lead to the outbreak of hostilities.

Morale

30. Despite the advances of science, the course of any war is determined by the morale of the nation—the will to win. This will must exist among both the Armed Forces and the civil population.

The Armed Forces

31. The armed forces of the United Kingdom are divided into three Services, corresponding to the elements in which they fight—Sea, Land and Air. This division is partly due to historical and traditional development, but has been retained because it makes for convenience and efficiency in administration and training. In some cases, however, efficiency in a specialised role requires an "overlap" between two Services, e.g., the Fleet Air Arm, the Royal Marines, the Army Air Corps and the R.A.F. Regiment.

32. Modern war cannot be waged successfully by one Service acting alone, and all major operations are therefore Joint Service undertakings. In many cases, one Service may be the predominant partner with assistance from one or both of the others. Thus:—

(*a*) All modern land operations are in fact joint Army/Air operations, in which the Army depends on the R.A.F. for tactical co-operation. Maritime forces are responsible for the safe arrival of troops and supplies being carried by sea to theatres abroad. Independent operations by the Army are virtually limited to internal security matters.

(*b*) The Navy relies upon the Army and shore-based aircraft for the protection of its main bases. It also depends upon direct co-operation with shore-based aircraft for many operations at sea.

(*c*) The R.A.F. depends upon help from the Army and the Navy for the protection of its bases, and on naval co-operation for the safe transport by sea of its fuel and supplies. It is, however, practicable for the R.A.F. to carry out certain operations without direct support from the other two Services once secure bases have been established (e.g., the bombing of Germany during the Second World War).

(*d*) All three armed Services, though the Army is the main provider, may be required to reinforce the Civil Defence Organisation with personnel not actually employed in fighting the enemy.

33. The extent to which any one Service acts independently of the others is therefore comparatively small. Each Service used to refer to its own strategy; today it is more correct to talk about the Navy's or the Army's or the Royal

Air Force's role in (military) strategy. In the majority of problems, the strategy of each Service is so directly related to, or dependent upon, that of one or both of the others that the closest co-operation, both in conception and execution, is essential.

Logistics and Flexibility

34. In a global war, operations may have to be conducted almost anywhere in the world. There will never be sufficient forces to be strong everywhere at once; it is therefore necessary for the limited forces available to be able to concentrate in any theatre at any time. To do so, the forces must be both mobile and adaptable; this requires sound logistics and flexible organisation.

The most important item in logistics is the base.

35. A base stocked with the right material and able to replenish from the main sources of supply is essential to the operations of all the Armed Services.

A properly disposed network of bases confers world-wide strategic mobility. Each individual base provides the means for maintaining the tactical mobility of forces allocated to the area in which it is situated.

Bases are, however, extremely costly and some may prove unnecessary in a particular war. Moreover, they lack the glamorous appeal associated with fighting units and are apt to be shelved in peacetime estimates. Yet, because they take so long to create, it is in peacetime that provision must be made for them.

Bases must be secure but they are not defensive in character; they are springboards from which offensive operations are launched either to protect British or Allied interests or to attack those of the enemy.

Bases are considered in some detail in Chapter 22, together with the associated subject of Afloat Support, which is essential for the Navy in areas where bases do not exist, are inaccessible or are particularly vulnerable to enemy attack.

36. The need for flexibility has already been mentioned in connection with the planning and organisation of the national resources for a rapid switch from peace to war.

Flexibility is also necessary in the composition, training, and equipment of the armed forces, since they are not only required to be capable of rapid movement to the vital area, but must know how to live and fight when they get there, and have the proper equipment.

So far as the Navy is concerned, this question is of particular importance in connection with the operation and maintenance of naval aircraft.

37. Any increase in the tactical mobility of a force involves the provision of more machines and equipment; but this tends to reduce its strategic mobility because there is a much larger volume of material to be moved.

Compromise between these two conflicting requirements is difficult because of the increased weight and complexity of modern weapons, and the considerable maintenance which they need. This difficulty is accentuated when operations have to be conducted against an enemy who is near to his main base and thus has an easier logistic task.

The Services must therefore know the order of priority of their commitments in order that the best practicable compromise between tactical and strategical mobility may be worked out. Such order of priority will be determined by national policy; once adopted, it cannot be altered without corresponding adjustments in the organisation and equipment of the Services.

PART III—MACHINERY FOR CONDUCTING WAR

CHAPTER 7

The United Kingdom Defence Organisation

> "The office of the statesman is to determine and to indicate to the military authorities the national interests most vital to be defended as well as the objects of conquest or destruction most injurious to the enemy."
>
> Mahan, *op. cit.*

1. It has already been explained that in a future global war, the United Kingdom would be fighting as a partner in an alliance of several nations including the United States of America. The machinery for formulating the allied war policy and grand strategy, and for conducting the war at the highest level, is described in Chapter 10. But to understand how the United Kingdom plays her part, it is first necessary to have a general understanding of the defence machinery of the United Kingdom goverment; how defence policy is produced and implemented and how war is likely to be directed. This can best be discussed under two headings:—

The Formulation of Policy and the Execution of Policy.

The Formulation of Policy

2. In a country like the United Kingdom, where manpower, material and money are limited, the formulation of Government policy on any matter of importance can seldom be left to a single Minister or Department. A decision by any one Department to adopt any particular line of action has so many repercussions in other fields that discussion between the various interests is an essential prerequisite for the conduct of Government business. A fundamental element in the Government of the United Kingdom, therefore, is a system which brings together, round a table, Ministers or officials to discuss the line to be taken in all the various fields of Government activity and to agree on the policy which is considered to be best in the national interest.

3. This "committee system" starts at the top in the Cabinet, where the Prime Minister and his colleagues meet to decide all major questions of policy, and is reflected throughout the machinery of Government in a vast number of subordinate committees designed to secure the maximum co-ordination of policy in all fields.

4. The Cabinet Organisation. The supreme responsibility for national defence rests with the Prime Minister and the Cabinet, in which the Armed Services are represented by the Minister of Defence. Subject to this, defence problems which engage the collective responsibility of the Government (i.e. those which are very important or which concern more than one Government Department) are normally handled by the *Defence Committee* on the Cabinet's behalf; in particular, the Defence Committee deals with problems which are related to the Commonwealth and to foreign and colonial policy.

5. The Defence Committee meets under the chairmanship of the Prime Minister. Experience has shown that, in view of their wide range and variety, defence problems cannot conveniently be handled by a Committee of fixed membership. The Committee is therefore so constituted that the various types of problems can be considered by the Ministers most directly concerned with them.

The following Ministers are members of the Defence Committee:—

Prime Minister (Chairman).
Home Secretary.
Foreign Secretary.
Chancellor of the Exchequer.
Commonwealth Secretary.
Colonial Secretary.
Minister of Defence.
Minister of Labour and National Service.
First Lord of the Admiralty.
Secretary of State for War.
Secretary of State for Air.
Minister of Supply.

The Prime Minister decides which of these members should attend particular meetings, according to the subjects to be discussed. In addition, other Ministers will on occasion be invited to attend meetings at which matters affecting their Departments are to be discussed.

6. The Chiefs of Staff attend all meetings of the Defence Committee, and may also be invited to attend meetings of the full Cabinet. They are thus in a position to fulfil their traditional duty to tender to the Government professional military advice.

7. The work of the Defence Committee involves continuous and detailed study of many subjects. Much of this study is undertaken by subordinate committees, both at ministerial and official level, under the general direction and authority of the Defence Committee.

8. Relations of the Minister of Defence with the Service Ministers and the Minister of Supply. Under the Ministry of Defence Act, 1946, the Minister of Defence is " in charge of the formulation and general application of a unified policy relating to the Armed Forces of the Crown as a whole and their requirements."

In the discharge of this responsibility, the Minister of Defence has authority to decide (subject to the responsibilities of the Cabinet and the Defence Committee) all major matters of defence policy affecting the size, shape, organisation and disposition of the Armed Forces, their weapons and equipment, and their supply arrangements (including defence research and development).

Thus, for example, the Minister of Defence:—

(*a*) apportions the available resources between the three Services in accordance with the strategic policy laid down by the Defence Committee.

(*b*) settles questions of general administration on which a common policy for the three Services is desirable.

(*c*) co-ordinates the contributions of the three Services to Allied organisations, such as N.A.T.O.

(*d*) administers Joint Service organisations, such as the Amphibious Warfare Headquarters and the Joint Intelligence Bureau.

9. In deciding major matters of policy, the Minister of Defence consults with the Service Ministers and the Minister of Supply. For the purposes of such consulta-

tion and for discussion of inter-Service problems, a *Defence Board* has been established with the following membership:—

Minister of Defence (Chairman).
First Lord of the Admiralty.
Secretary of State for War.
Secretary of State for Air.
Minister of Supply.
Chief of the Defence Staff.
Chief of the Naval Staff (First Sea Lord).
Chief of the Imperial General Staff.
Chief of the Air Staff.
Permanent Secretary, Ministry of Defence.
Chief Scientist, Ministry of Defence.

Other officers and officials are invited to attend meetings of the Board as required.

10. There are also various other committees for the discussion of particular inter-Service problems, of which the three most important are:—

(*a*) the Standing Committee of Service Ministers, which consists of the Minister of Defence and the three Service Ministers, with other Ministers co-opted as necessary. This Committee co-ordinates questions of administration and other matters (excluding production) common to all three Services.

(*b*) the Joint War Production Committee, which watches over the industry and production on which the country will rely in war. This Committee advises on the extent to which war material should be produced for the Armed Forces and the stocks which should be held at home and overseas.

(*c*) the Defence Research Policy Committee, which advises on the scientific policy in the defence field and on the latest developments in defence research.

11. When the Service Ministers or the Minister of Supply wish to make proposals on any matter affecting defence policy, they normally submit them to the Minister of Defence. They have, however, the right to make submissions direct to the Cabinet or the Defence Committee.

12. THE CHIEFS OF STAFF ORGANISATION. The Chiefs of Staff Committee consists of:—

Chief of the Defence Staff.
Chief of Naval Staff.
Chief of the Imperial General Staff.
Chief of the Air Staff.

The Chief of the Defence Staff, who is the principal military adviser to the Minister of Defence, acts as Chairman of the Committee.

13. The Chiefs of Staff Committee is collectively responsible to the Government for professional advice on strategy and military operations and on the military implications of defence policy generally.

The agreed collective advice of the Committee is tendered to the Minister of Defence by the Chief of the Defence Staff. When the Committee cannot all agree, the Chief of the Defence Staff reports to the Minister the views of the other members of the Committee, and adds his own advice on these views.

14. The Chiefs of Staff may meet under the chairmanship of the Minister of Defence, whenever he or they so desire. As stated earlier, the Chiefs of Staff attend all meetings of the Defence Committee, and may attend meetings of the full Cabinet.

15. The Chiefs of Staff Committee is served by the Joint Planning Staff, which is responsible to the Chief of the Defence Staff as Chairman of the Committee. There are also a number of Joint Service committees, which advise on such matters as current strategical problems, operational and administrative plans, intelligence, and coast and air defence.

16. The Chief of the Defence Staff may call on the other Chiefs of Staff to make available the services of the Naval, General and Air Staffs to assist him in discharging his functions. The three Staffs are together regarded as forming a Joint Defence Staff.

17. The above is a brief and simple sketch of the main elements in the machinery for formulating British Defence Policy, but it is enough to show that inter-departmental discussion of policy is a continuous process. All the committees mentioned meet regularly in peace; in war, those such as the Defence Committee and the Chiefs of Staff Committee might well meet daily.

The Execution of Policy

18. The " committee system " described above results in the formulation of a definite line of policy for each problem; it is then necessary to put this policy into effect. Since the various committees are not empowered to take executive action, the " execution of policy " is the responsibility of the various Government Departments concerned. These, having been represented on the inter-departmental committees, know exactly what has been decided and are in a position to carry it out on the agreed lines.

19. Thus, within the limits of the defence policy laid down by the Minister of Defence, and in conformity with it, the Service Ministers, working through the Board of Admiralty and the Army and Air Councils, are responsible for the efficiency and administration of the three Services.

For example, the Minister of Defence, after hearing the advice of the Service Ministers and the Chiefs of Staff, will decide on the size of each of the Armed Forces. The executive action to create a Navy, Army and Air Force of the agreed size is taken by the Admiralty, the War Office and the Air Ministry respectively, and by the Ministry of Supply as the Supply Department for the Army and R.A.F. The committee system will have ensured that the size of each of the Forces has been related to each other and to the ability of the country to find the men to man them, the material to equip them and the money to finance the whole project.

20. In the operational field, the Minister of Defence is ministerially responsible to the Prime Minister for the execution of military operations. The Chiefs of Staff are responsible to the Minister of Defence, through the Chief of the Defence Staff, for the conduct of military operations.

21. It is interesting to compare this system—whereby the people responsible for planning, namely, the Chiefs of Staff, are the same people who are ultimately responsible for executing the plans—with the German system whereby planning was done in the 1939/45 war by an entirely independent body of experts. Many influential armchair critics have advocated the German system in this country on the grounds that planners should be free to devote their whole time to the job and should not have their minds cluttered up with departmental detail. In fact, the German system broke down in war as soon as things became difficult, for the very reason that their planners were out of touch with departmental detail. Their plans became more and more unrelated to reality, and, in the final stages, meaningless.

Readiness for War

22. In peacetime, the attention of the Government is mainly directed to the pursuits of peace—the expansion of trade, the build-up of the national finances, the welfare of the people and similar matters.

23. It would, however, be wrong to assume that all thinking on defence problems is confined to the Service Departments until an emergency arises. On the contrary, special provision has been made that it should continue in peacetime under the authority of the Defence Committee.

24. The term " Readiness for War " covers the whole field of Government activities and involves planning on the part of every Government Department, civilian as well as Service. It embraces, for instance, the preparation of plans for the following:—

(*a*) The mobilization of manpower and its allocation between the Home Front (industry, needs of the civilian population and Civil Defence) and the armed services.

(*b*) The mobilization of production to warlike purposes, and the laying down of reserve stocks.

(*c*) The war legislation to give the Government the emergency powers it requires.

(*d*) The availability and use of merchant shipping.

(*e*) Food control and rationing.

(*f*) Civil Defence arrangements, including the provision of air-raid shelters.

(*g*) Postal and telegraphic censorship and the adaptation of civil communications systems to war requirements.

(*h*) Defence of the Colonies and the mobilization of Colonial resources in manpower and material.

(*i*) The defence of overseas theatres including the provision of garrisons.

(*j*) Operational plans for the defence of the country and its merchant shipping and for the deployment of the Navy, Army and Air Force.

Preparations on these lines are the subject of continuous planning by Departments under the guidance of a number of committees, each of which deals with a selected range of subjects. Under the Defence Committee is a War Book sub-committee which keeps up-to-date a War Book setting out the action to be taken by all Government Departments, Colonial Governments and overseas commands when the Government of the day so authorise, in order that the country can pass quickly from a peace to a war footing.

Setting the War Machine in Motion

25. The state of readiness of the United Kingdom for war naturally varies with the political situation. As this deteriorates, preliminary measures may be taken, such as increasing the money allocated to the Armed Forces, collecting essential material, etc.

Formal indication of a state of strained relations with another power is given by means of " warning telegrams ". These telegrams are issued by all Government departments and the plans of authorities all over the world are based upon initiating certain precautionary measures on receipt of a " warning telegram ".

26. The existence of a state of war is announced to the public by publication in the *London Gazette*, and to all authorities by " War telegrams ". In the event of an overt act of war being committed by a foreign power, it is the duty of the senior

officer on the spot to take such action as the situation calls for to safeguard his command and protect national interests.

In the period shortly before and after the declaration of war, a number of Orders in Council are issued and Acts of Parliament made valid to institute the control necessary in war, e.g. mobilization, censorship.

The Conduct of War

27. No fundamental change is involved in the organization described above when war breaks out but there is naturally a very great increase in the speed at which the business has to be transacted; this necessitates some modifications to the peacetime machinery.

28. The precise organization that is adopted in any particular war will largely depend on the personalities in charge of the machine when the crisis arises, and particularly on the personality and wishes of the Prime Minister of the day. The experience of the First and Second World Wars shows that the following changes may be desirable in the interests of efficiency:—

(*a*) The Prime Minister assumes the responsibilities of Minister of Defence. Only by so doing can he bring his influence to bear directly on the activities of all Departments.

(*b*) The size of the Cabinet is reduced. The normal peacetime Cabinet (which consists of some twenty Ministers) remains in being, but the most important business is conducted in a smaller "War Cabinet" consisting of some six to ten of the principal Ministers. The Service Ministers are not among these, but attend as necessary.

29. With these modifications, and with the new impetus, the Government proceeds to direct the war in very much the same way as it conducts its normal business in peacetime. Strategic policy, manpower policy, production policy, Civil Defence policy, etc., are formulated in the same kind of interdepartmental and inter-Service committees as exist in peacetime; some peacetime bodies may be discarded when it is found they are unnecessary, and new bodies created to deal with the new problems that arise.

30. In the executive field, the responsible departments continue to put the agreed policy into effect. The Chiefs of Staff Committee, for instance, having, with the assistance of the Joint Staffs, prepared its strategical and operational plans and discussed them with Ministers in committee, issues its instructions in the form of a broad directive. Each Chief of Staff in his own department then follows up this broad directive with detailed instructions to the commands concerned.

Defence of the United Kingdom

31. The co-ordination of plans for the defence of the United Kingdom and of shipping in United Kingdom coastal waters is in the hands of the United Kingdom Commanders-in-Chief Committee. The members of this Committee are senior officers of the three Services who have been designated to command in war the forces allocated for the local defence of the United Kingdom (e.g., the Naval Commander-in-Chief, United Kingdom Home Station (designate), is the peacetime Commander-in-Chief, Portsmouth).

The United Kingdom Commanders-in-Chief Committee is directly responsible to the Chiefs of Staff Committee, and is served by a small joint staff. In war, it

would also be responsible for providing assistance to the Civil Defence organization from the Armed Forces; it thus maintains close liaison with the Director-General of Civil Defence.

32. Civil Defence policy is decided by the Defence Committee, which is advised by the Civil Defence (Official) Committee. The Home Secretary is the Minister responsible for all Civil Defence matters.

Defence of the Colonies

33. Responsibility for the defence (other than purely local defence) of Colonial and other dependent territories rests with the Government of the United Kingdom. The Chiefs of Staff advise on the threat to each Colony, the scale of forces which should be maintained in each and the military role which each can best perform in war. Under the Defence Committee is the Overseas Defence Committee, consisting of officials from various government departments and representatives of the service ministries, which is responsible for co-ordinating the planning of Colonial defence, advising the Colonies on all local defence problems and assessing the contribution each can make to the general pattern of Commonwealth defence.

34. British interests in the Middle East and the Far East are of major importance, and to watch over these interests a " British Defence Co-ordination Committee " is set up in each area. Each committee comprises the Service Commanders-in-Chief and a political representative; Governors, Ambassadors and other authorities can be invited to attend meetings as necessary.

The Defence Co-ordination Committees report direct to the Chiefs of Staff Committee in London. Their function is to co-ordinate all defence measures in each area and to provide guidance to Colonial Governors. On purely military matters, the Commanders-in-Chief in these areas act jointly as a Commanders-in-Chief Committee.

35. Each Colonial Governor is responsible for the security of his Colony, and on local defence matters is advised by a Local Defence Committee consisting of the local Service Commanders and civil representatives. For convenience, some colonies are grouped together under Regional Defence Committees (e.g., East African Defence Committee). If his colony is within the area covered by a British Defence Co-ordination Committee, the Governor receives strategic guidance from this Committee, but it has no jurisdiction over him and locally raised forces may not be under the command of the area Commander-in-Chief. Co-operation between the Defence Co-ordination Committees and the Governors of Colonies in their areas is therefore essential.

Commonwealth Defence

36. It was shown in Chapter 3 that each member nation of the Commonwealth is an independent sovereign state. Each decides whether to enter a war and the part it will play if it does so. In war, as in peace, the United Kingdom is no more than a partner in an association of friendly, but quite independent, states.

37. While each member nation of the Commonwealth determines its own defence policy, there is close and continuing co-operation between Commonwealth nations on defence matters and, in varying degrees, co-ordination of defence policy and plans. Following the Second World War, it was agreed that Service Liaison Staffs, composed of members of all three Services, should be exchanged

between the United Kingdom and Commonwealth countries; the duties of these Liaison Staffs are:—

(*a*) To represent the views of the Chiefs of Staff of their own country to the Chiefs of Staff of the country to which they are appointed. For this purpose the senior officers of each Liaison Staff attend meetings of the Chiefs of Staff in the country to which they are appointed when matters of common interest are under discussion.

(*b*) To act as a channel of information between their own service and the corresponding service of the country to which they are appointed.

(*c*) To act as advisers on military matters to their High Commissioner.

38. Not all Commonwealth countries are represented in London by full Service Liaison Staffs; some maintain Liaison Officers who perform only duties (*b*) and (*c*). Similarly, the United Kingdom does not maintain a full Liaison Staff in all Commonwealth countries, though service liaison is always provided through some channel. The presence in London of Service Liaison Staffs from several Commonwealth countries provides a convenient means of direct consultation between their respective Chiefs of Staff.

CHAPTER 8

The Admiralty

> Admiralty. The Lord High Admiral for the time being and when there shall be no such Lord High Admiral in office, any two or more of the Commissioners for executing the Office of Lord High Admiral.
>
> *Q.R. and A.I.*—Explanation of Terms

The Function of the Admiralty

1. The Admiralty is the department of State responsible for the Naval Service, which includes everyone and everything controlled by the Admiralty, paid for out of the Navy's share of Government expenditure and concerned with the planning, making and running of the Royal Navy. It formulates the advice given to Her Majesty's Government on all defence matters which involve the employment of maritime forces, and takes executive action when necessary in defence matters, consulting the Air Ministry on any question which involves the employment of R.A.F. aircraft.

In war, the Admiralty is also responsible for the safety of all British merchant ships at sea, and takes over control of their movements between their ports of departure and their destinations. It also co-ordinates and supervises the arrangements for merchant ship-building and repair. Planning for these wartime responsibilities is carried on in peace.

The Structure of the Admiralty*

2. The Admiralty can be divided broadly into four parts:—

THE BOARD OF ADMIRALTY, which directs and controls the whole machine.

THE NAVAL STAFF, which advises and assists the Board in strategic and operational planning, in disposing the Fleet and in formulating broad policy on tactical doctrine and requirements of men and material. Sections of the Naval Staff are known as Divisions.

THE DEPARTMENTS, which provide the men, ships, aircraft and supplies to carry out the approved policy.

THE SECRETARIAT, which is the general co-ordinating agency, regulates finance, provides advice on policy, conducts all correspondence on behalf of the Board and maintains records. Sections of the Secretariat (other than those which provide Common Services) are known as Branches.

The Board of Admiralty

3. The first sustained attempt to develop English sea power was made in the reigns of Henry VII and Henry VIII, and the foundations of the Navy and the Admiralty were then laid. Henry VIII appointed a " High " or " Lord " Admiral to command the Fleet at sea, with a deputy entitled the " Vice-Admiral of England and Lieutenant of the Admiralty " (the office survives today in honorary form). The deputy, assisted by four officers, was made responsible for administration.

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* The details of the text as illustrated by *Diagram* 10 at the end of the book are those current in June 1960. They may be taken as typical but are liable to amendment in detail from time to time.

Thereafter, this arrangement experienced many changes, often reflecting the struggle between Crown and Parliament for control of the Navy.

In the early 18th Century, the office of Lord High Admiral was finally (apart from one brief resuscitation later) put " in commission ", and as such it remains today. Lords Commissioners for executing the office of Lord High Admiral are appointed by name by Admiralty Patent. A new Admiralty Patent is issued on each change of a Lord Commissioner. Legally, the Queen could, if so advised, still revoke the Admiralty Patent and issue New Letters Patent to one person as Lord High Admiral, instead of to a number of Lords Commissioners.

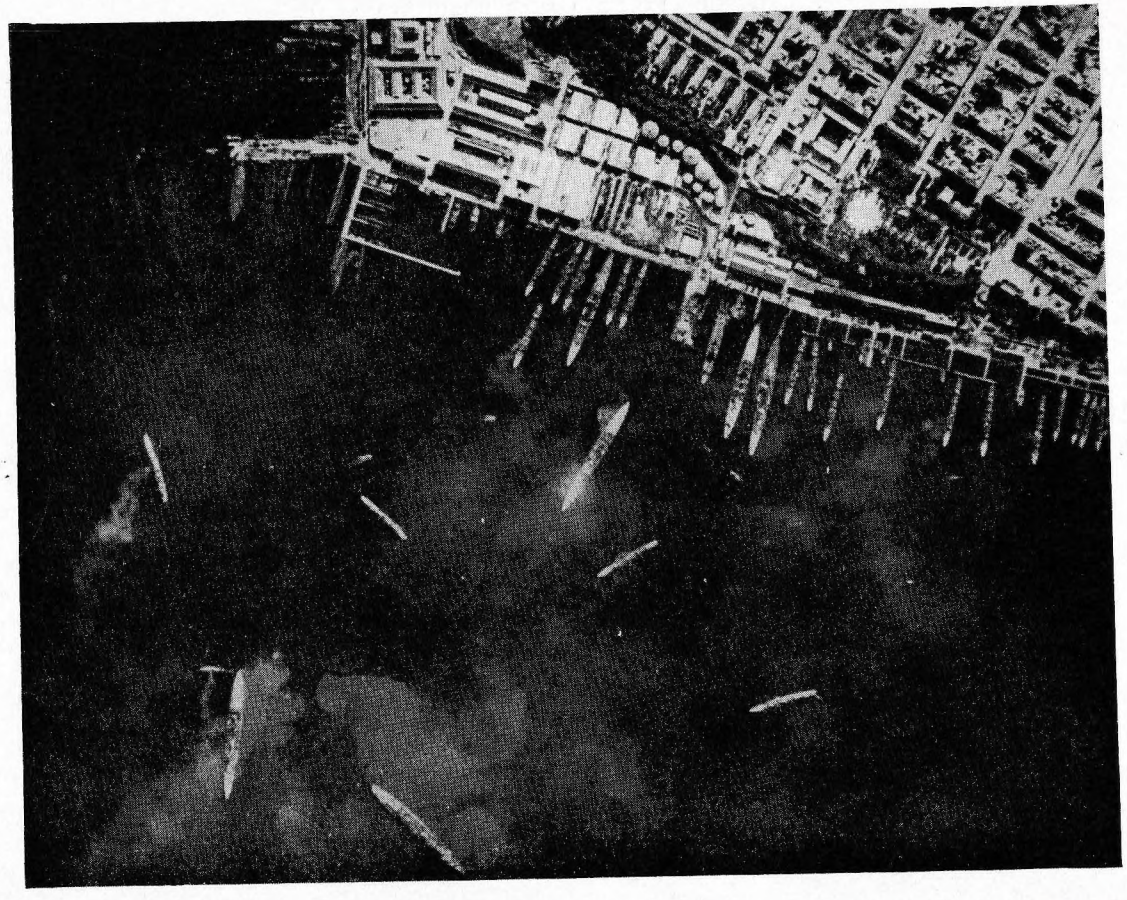
4. " That mysterious and awful body, the Board of Admiralty ", as Admiral of the Fleet Lord Fisher of Kilverstone once described it, took on its present form in the 1870s. The size and actual composition of the Board varies from time to time. In 1914, there were nine Lords Commissioners, four naval and five civilian. There are now (1960) six naval and three civilian Lords Commissioners. Additional members may be appointed to deal with specific problems or to superintend new fields of activity; for example, during the Second World War, an eminent shipbuilder was appointed to the Board to deal with merchant shipbuilding and repairs. The post lapsed after the war. The composition of the Board at present (1960) is as follows:—

2 Ministerial Members ..	The First Lord
	The Civil Lord
6 Naval Officers	First Sea Lord and Chief of Naval Staff
	Vice-Chief of Naval Staff
	Deputy Chief of Naval Staff and Fifth Sea Lord
	Second Sea Lord and Chief of Naval Personnel
	Third Sea Lord and Controller of the Navy
	Fourth Sea Lord and Vice-Controller
1 Civil Servant	Permanent Secretary

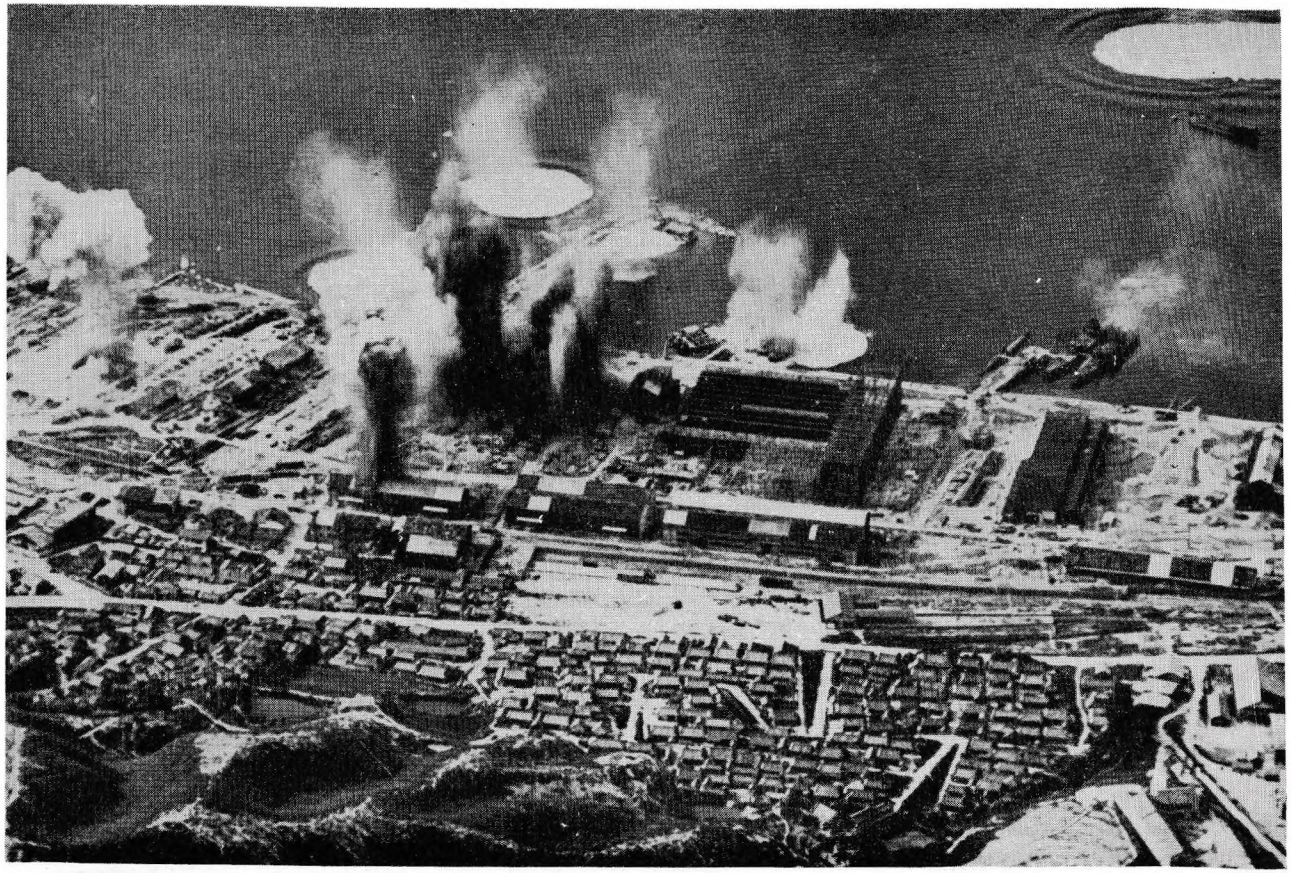
5. The number and titles of the Lords Commissioners of the Admiralty, and the broad division of business between them, are authorised by an Order in Council. The Admiralty Patent gives the impression that all members of the Board have equal standing and responsibility; the Order in Council, however, makes clear that the First Lord is supreme and that the other Board members are responsible to him for the separate duties he may assign to them.

The Order in Council also limits the collective responsibility of the Board for operational matters. The First Sea Lord, in his capacity as Chief of Naval Staff, is responsible to the First Lord for " the issue of orders to the Fleet affecting war operations and the movement of ships, which orders may be issued in his own name in his capacity as Chief of Naval Staff ".

6. Subject to the personal responsibility of the First Lord to Her Majesty and to Parliament for all the business of the Admiralty, responsibility for " Board decisions " is shared by all members. In practice, the full Board meets only to discuss major questions of policy; most business is conducted on paper, decisions being given by the responsible Board members after divisions, departments and branches concerned have minuted their advice. The Second, Third and Fourth Sea Lords, Vice Chief of Naval Staff, Deputy Chief of Naval Staff and Fifth Sea Lord, and the Permanent Secretary, each have one or more deputies or assistants who are not members of the Board, but who have authority to give " decisions " on certain matters on behalf of their superintending Board member.



6. Taranto after attack by Naval aircraft on warships in harbour



7. Naval aircraft attack on Fuge, Japan

Duties of Members of the Board

7. Briefly, the duties of the members of the Board are as follows:—

THE FIRST LORD is responsible to the Queen and to Parliament for the general direction of all business relating to the Navy. He is assisted in his parliamentary duties by the other ministerial members of the Board. In the exercise of his overall responsibility, he assigns to the other members of the Board such duties as he thinks fit.

He decides the appointments of officers of the rank of Captain and above.

THE CIVIL LORD superintends the Navy Works Department and the Greenwich Hospital Department in addition to assisting the First Lord in his Parliamentary duties. He also acts as Chairman of the Admiralty Finance Committee, and Chairman of the Admiralty Industrial Council.

THE FIRST SEA LORD is the chief naval professional adviser to the First Lord and to H.M. Government. He is also the Chief of Naval Staff (C.N.S.) and, in this capacity, he is assisted by the Vice-Chief of Naval Staff (V.C.N.S.) and the Deputy Chief of Naval Staff and Fifth Sea Lord (D.C.N.S.).*

As Chief of Naval Staff, the First Sea Lord is responsible to the First Lord for the issue of orders to the Fleet affecting war operations and the movements of ships; these orders may be issued in his own name.

The special position of the First Sea Lord is recognised by a rule that in any matter of great importance he is always to be consulted by other members of the Board.

The First Sea Lord has, therefore, a threefold responsibility:—

(*a*) joint, as a member of the Board;
(*b*) individual, as Chief of Naval Staff;
(*c*) individual, as the chief naval professional adviser to H.M. Government, which includes membership of the Chiefs of Staff Committee.

THE SECOND SEA LORD is the Chief of Naval Personnel. He is responsible for the manning of the Fleet, i.e., for obtaining the personnel required for the Royal Navy, Royal Marines, and Women's Royal Naval Service, including the reserve forces; for matters affecting their conditions of service, including training, discipline, promotion, advancement, pay, allowances and pensions; for ceremonial questions and for the provision of welfare, education and medical services.

He is also responsible for the appointment of officers below the rank of Captain.

THE THIRD SEA LORD is the Controller of the Navy. He superintends all business relating to naval material. He is responsible for the design, construction, maintenance and repair of ships, armaments and equipment, and for the associated research and development; for the provision and repair of naval aircraft and air equipment; and for the general administration of the Royal Dockyards and Aircraft Repair Yards.

THE FOURTH SEA LORD AND VICE CONTROLLER superintends all business relating to supplies and transport. In addition, he is responsible, on behalf of

* The Deputy Chief of the Naval Staff and the Fifth Sea Lord were formerly two separate appointments. The Deputy Chief of the Naval Staff was one of the First Sea Lord's principal assistants, the Vice-Chief of Naval Staff being the other. The Fifth Sea Lord was responsible for all naval air matters. The posts of Deputy Chief of the Naval Staff and Fifth Sea Lord were amalgamated in April 1957, in recognition of the fact that the Fleet Air Arm is now a fully-integrated part of the Royal Navy.

the Controller, for the superintendence of such business relating to the materiel of the Fleet as the Controller, with the approval of the First Lord, assigns to him from time to time. At present (1960), he is responsible on behalf of the Controller for the general administration of the Royal Dockyards and for maintenance in the Fleet.

His responsibilities for supplies and transport include:—

(*a*) The provision of naval, armament, victualling and medical stores, and of all types of fuel, for the Fleet.

(*b*) The general administration of all store depots and torpedo and cordite factories.

(*c*) The production and repair of armament stores.

(*d*) The transport of personnel and materiel.

THE VICE-CHIEF OF NAVAL STAFF assists the Chief of Naval Staff in the execution of his responsibilities for naval policy, strategy and operations. He superintends the Naval Staff Divisions which deal with plans, intelligence, operations, shipping protection, and communications; and also the Hydrographic Department and the Naval Weather Service.

THE DEPUTY CHIEF OF NAVAL STAFF AND FIFTH SEA LORD assists the Chief of Naval Staff on all questions of tactics, technical policy and fighting efficiency. His responsibilities include the study of maritime warfare; the staff requirements for new ships and naval aircraft; the development and use of weapons; the operational training of ships and units; training in strategy, tactics and staff duties;

THE PERMANENT SECRETARY is responsible for the general co-ordination of Admiralty business; for giving advice on policy in relation to previous experience and to Government policy as a whole; for the procedure for the conduct of Admiralty business; for the preparation and issue of all official communications of the Board; for naval information; for navy contracts; for the internal economy of the Admiralty Office, and the provision and administration of the civil staff. As "Accounting Officer for Navy Votes", he is responsible to Parliament, through the Public Accounts Committee, for controlling and accounting for, all moneys administered by the Admiralty. He is also responsible for the day to day business in the field of conditions of service of industrial employees and related matters.

The Naval Staff

8. The term "Naval Staff" does not mean all Naval officers serving in the Admiralty. It means the Divisions responsible, under the Chief of Naval Staff and his two assistants (V.C.N.S. and D.C.N.S.) for the formulation of maritime strategy, including strategic planning, and of tactical doctrines; and for stating the broad requirements, both quantities and specifications, of ships, naval aircraft, armament and equipment.

The Naval Staff, which includes some civilians, forms only about one-twentieth of the whole Admiralty.

9. The work of the Naval Staff is divided into two sections, each controlled by one of the Chief of Naval Staff's assistants, as follows:—

Under V.C.N.S. ..	.. Operational policy and plans, shipping protection, communications and intelligence.
Under D.C.N.S. ..	.. Tactical and weapon policy; staff requirements for material; fighting efficiency of ships and naval aircraft.

The Departments

10. The task of the Departments is to execute approved policy, i.e., to provide and administer the men, ships, aircraft, bases and supplies needed to make up the Navy, except in operational matters which are dealt with by the Naval Staff.

The Departments also have a share in the formulation of policy, since availability of personnel and materiel, industrial capacity and technical resources are vital factors in implementing policy. Thus, the Naval Staff advises on broad aims, and the Departments advise on the practical considerations involved in these aims; the final policy is determined in the light of both points of view.

The Departments form the greater part of the Admiralty Staff. Their personnel include naval officers of all specialisations, naval constructors, civilian engineers, scientists, drawing office and technical staff and many others.

The Secretariat

11. The Secretariat, which is staffed entirely by civilians, assists the Secretary in the execution of his responsibilities and functions.

Its tasks are, briefly, to co-ordinate Admiralty business in the non-technical sphere; to provide advice on the handling of business and on precedents; to examine proposed expenditure and to obtain Treasury sanction where necessary; to prepare the annual Navy Estimates and the Appropriation Account; to receive, pay and account for all money administered by the Admiralty; to undertake routine secretarial work; and to provide common services (e.g., typing) throughout the Admiralty.

Wherever possible, the Secretariat undertakes work which will leave Naval Officers and professional civilians (e.g., scientists) free to concentrate on their specialised duties, and every effort is made to ensure that it does not duplicate the work of the Staff Divisions and Departments.

The Working of the Admiralty

12. The Admiralty Organisation Chart must not be interpreted as indicating that Divisions, Departments and Branches work in watertight compartments under their own Superintending Lords. All Directors of Divisions or Departments are responsible to the whole Board for carrying out their duties.

13. Most problems involve more than one Division or Department. It is the responsibility of the Secretariat to obtain the views of all concerned and then to submit the collective advice to the Board for decision. The Secretariat is subsequently responsible for promulgating the final decisions to those required to take action.

CHAPTER 9

The System of Command in the Royal Navy

Through obedience, learn to command.
Pliny.

1. Chapter 7 showed how the United Kingdom Defence Organisation is based on the " Committee " system, and Chapter 8 described the Admiralty's part in this organisation. This chapter deals with the system of command in the Royal Navy.

Principles of Command

2. There are certain principles common to successful command on every level, in all services, and in all types of operations.

These are centralized direction, decentralized execution, and common doctrine.

3. CENTRALIZED DIRECTION is essential for the production of a cohesive plan to achieve a common aim. It is equally important in reorientating a plan (and at times even changing the aim) to compete with altered or unforeseen circumstances.

4. DECENTRALIZED EXECUTION is essential because there is a limit to the number of units over which one man can exercise personal control. Subordinate leaders should be free to use their initiative since, even if other circumstances permit, the time factor will normally prevent consultation with the commander. The commander should be told as soon as possible what is happening and why; he is then able to order complementary moves by other units and to establish a rigid control if desirable.

5. The degree of control retained by the commander depends upon his personality and the circumstances. For example, the precise timing of concerted efforts by major forces calls for rigid control to be maintained as long as possible, whereas an encounter between light forces demands the maximum flexibility. Subordinates should remember that it is easier for a commander to check initiative than to instil it. When in doubt, therefore, initiative is preferable to inaction.

6. COMMON DOCTRINE. Reference has already been made (in Chapter 5) to the advantages of a Common Doctrine. Such a doctrine should be the product of the digestion of experience, and it takes some time to promulgate new ideas through even one Service. It is necessary therefore for every force commander to issue his own doctrine on new matters as they arise; this " local " doctrine may never be generally accepted outside his force but it serves to meet the current needs. Even the interpretation of generally accepted doctrine will inevitably, and rightly, be affected by the personality of the force commander.

7. If the common doctrine is to be kept alive, a rapid analysis of experience, as it is obtained, is essential. In peace, commanders and their staffs analyse exercises, form conclusions, and make recommendations. In war, when the lessons to be learnt are vital and it is important to promulgate them quickly, additional staff officers may be needed to study the experience gained and pass on the lessons extracted; in formulating the lessons, the views of Commanding Officers with recent sea experience should be taken into account.

8. LEADERSHIP. A vital factor in the successful exercise of command is capable leadership by the commander. The leader who has secured the confidence of those under his command has already gone a long way towards winning the battle. Further remarks on Leadership and Morale will be found in the last chapter of this book.

Summary of the Principles of Command

9. The Principles of Command may be summarised by the following precepts:—

(*a*) The Commander's aim and the method by which he intends to achieve it must be clear to all;

(*b*) Each unit must have all relevant information of own forces and intelligence of the enemy, and must be given definite instructions in pursuance of (*a*);

(*c*) Each unit must, within the limits imposed by the current electronic policy, keep the Commander (and any other units concerned) informed of changes in circumstances and of its own actions;

(*d*) Each unit must co-operate with others, either by direct support or complementary action.

The System of Command in the Royal Navy in Peace

10. The command of all naval forces is vested in the Board of Admiralty. The Admiralty decides how the Royal Navy is to be organised and appoints a senior Flag Officer to exercise command (on behalf of the Board) of each part of the organisation. The Flag Officers so appointed are:—

(*a*) Commanders-in-Chief of various geographical areas, e.g., Commander-in-Chief Far East Station. These Commanders-in-Chief have certain forces, bases and facilities placed under their command. Overseas, these forces usually comprise the Fleet or Squadron of the same name as the "station" for which the Commander-in-Chief is responsible.

(*b*) The Commander-in-Chief, Home Fleet, who commands all ships in the Home Fleet; he is not responsible for any geographical area.

(*c*) Certain Flag Officers who are responsible direct to the Admiralty for particular functions. These include:—

(i) Flag Officer Air (Home) who commands all naval air stations in the United Kingdom.
(ii) Flag Officer, Submarines, who commands all submarines in home waters and advises the Board of Admiralty on all submarine matters.
(iii) Flag Officer Commanding Reserve Fleet, who is responsible for the administration of all ships in the Reserve Fleet.

(*d*) Commanders of forces assembled for specific purposes. These appointments are usually of a temporary nature.

11. Commanders-in-Chief and Flag Officers who have large forces under their command exercise command through subordinate Flag or Senior Officers. These subordinate commanders are responsible for flotillas or squadrons; alternatively, if a Task Organisation is in force, they act as Force, Group or Unit Commanders.

12. The Commandant-General, Royal Marines, commands all Royal Marines Establishments and Units (except those allocated for service in the Fleet or other operational commands). He is responsible to the Board of Admiralty for their training and administration, and issues to them orders for implementing the general directions of the Board.

The British System of Maritime Command in War

13. In war, the system of command over British naval forces operating under national command will be similar to that in peace. It is, however, likely that ships will be organised into Task Forces and Task Groups, rather than into squadrons and flotillas as is usual in peacetime.

14. In a global war, the United Kingdom would not be fighting alone, but as a member of the North Atlantic Treaty Organisation. In these circumstances, much of the Royal Navy would operate under Allied Command, and only a comparatively small proportion would remain under purely British National Command for operations in United Kingdom Coastal Waters and in areas outside that covered by the Alliance. Allied Command systems are discussed in the next chapter.

The Control of Maritime Operations

15. Before the discovery of wireless, the Admiralty could exercise no more than the broadest control of operations at sea. Senior Officers in command were all afloat, and consulted shore authorities only to obtain intelligence and supplies. Ships were too mobile a force to be controlled from shore, since the shore authorities' knowledge of the operational picture was limited, by absence of communications, to their immediate surroundings. Senior Officers afloat were similarly handicapped since they were unable to exercise tactical control outside the limits of visibility.

16. The revolutionary developments in communications before and during the First World War resulted in shore authorities, particularly the Admiralty, being well supplied with intelligence, not all of which could be passed to Senior Officers afloat. As a result, shore authorities were on some occasions better informed of the progress of operations than were the Senior Officers at sea; indeed, the Admiralty at times issued detailed tactical orders direct to ships. It was, however, recognised as a general principle that Senior Officers at sea should be supplied with as much intelligence as practicable and given broad directions, and then be left to make tactical decisions themselves in the light of their understanding of the situation.

17. During the Second World War, the complications of the control and organisation of merchant shipping in connection with the operation of convoys, and the wealth of intelligence (e.g., from D/F fixes and reported contacts) to be digested, made it necessary for area Commanders-in-Chief to have shore headquarters. Only by being ashore could they keep in continuous touch with the Admiralty, other area Commanders-in-Chief, and Royal Air Force Commanders, and with their own subordinates at sea; had they been at sea, such contact would have been impossible in view of the need to maintain radio silence. Another great advantage was that in a shore headquarters, past operations could be analysed and new Tactical Doctrine developed and promulgated.

Some major Commanders remained afloat, and there were occasions when the Admiralty possessed better information, or the Commander was unable to co-ordinate operations without breaking radio silence. On such occasions, the Admiralty sometimes took over control of the forces engaged (e.g., in the operations against the German battleship *Bismarck*).

18. In the light of experience during the Second World War, it is now accepted that maritime operations should be controlled from shore headquarters.

The main reasons for this are:—

(*a*) The need to maintain continuous contact with forces at sea (unhampered by restrictive electronic warfare policies) in order to co-ordinate their activities;

(*b*) The need for continuous consultation with adjacent Commanders; with R.A.F. Commanders; and with the authorities concerned in the operation of merchant ships;

(*c*) The fact that the space required for a Commander-in-Chief's staff, communications equipment and operational and intelligence centres cannot today be provided in one ship.

In their shore headquarters, Commanders-in-Chief are free to concentrate on the planning of operations and the disposition of forces; the tactical handling of the ships is delegated to Force Commanders.

19. The degree of control exercised from a shore headquarters will depend mainly on the personal relationship between the shore and sea authorities concerned.

In principle, however, control should not be exercised in more detail than that in which the shore authority is aware of the circumstances at sea. For example, if all he knows is that mines have been laid in a certain position, it will be sufficient to order all ships to avoid that position. If, however, a channel has been swept through the minefield, it will be necessary to tell ships the precise route they are to follow.

Again, if a shore authority is continuously informed by radar of the positions of his own ships and of an enemy, he may issue detailed tactical orders. In most cases, however, it will be better to provide the Senior Officer afloat with the intelligence and leave him to make the tactical decisions in the light of his superior knowledge of the prevailing circumstances and conditions.

It has been agreed, for planning purposes, that the Admiralty will not, in any future war, exercise direct operational control of warships or merchant ships.

Maritime Headquarters

20. As stated in Chapter 1, paragraph 13, most operations at sea are now the joint concern of the Navy and the Royal Air Force, though the Navy is normally the predominant partner. The proportion of the Royal Air Force to be employed on maritime operations is decided by the Chiefs of Staff, on the advice of the Admiralty and the Air Ministry (see Appendix A). The division of these maritime aircraft between Coastal Command at home and the various theatres overseas is agreed between the Admiralty and the Air Ministry. The deployment of maritime aircraft in a particular theatre is arranged by the Royal Air Force authorities concerned on the basis of the maritime situation specified by the Naval authorities.

In addition to aircraft specifically designed and equipped for maritime operations, other units of the Royal Air Force may, by Joint Service agreement, undertake tasks connected with the war at sea, e.g., fighters to protect convoys, bombers to lay mines.

21. The command of Joint Sea/Air operations is, wherever possible, exercised from a Maritime Headquarters, where both the Naval and Royal Air Force Commanders and their staffs have access to common intelligence facilities, and can function as a team. At each level, the equivalent Naval and Air Commanders are jointly responsible for the planning and conduct of operations.

In the day-to-day working of the command system, naval influence tends to predominate because maritime operations are the concern of the whole Navy, whereas only part of the Royal Air Force is so engaged; the Naval Commander

therefore acts as the co-ordinating authority in the Maritime Headquarters and is responsible for deciding the priority of tasks if there is a difference of opinion. Once the tasks are decided, it is the practice for the Naval Commander to say what has to be done, and, so far as Royal Air Force maritime aircraft are concerned, their method of carrying out the task is entirely at the discretion of the Royal Air Force Commander, who is in no way subordinate to the Naval Commander.

The Functions of a Maritime Headquarters

22. As stated above, control of maritime operations is exercised jointly by the R.N. and R.A.F. Commanders from a Maritime Headquarters.

The nerve centre of such a Headquarters is the Joint Operations Room which forms the focus for the co-ordination of all activities, both Naval and Air. Here, the main plots provide the Commanders with an up-to-date picture of the operational situation.

Naval activities at the Headquarters, which are conducted in detail in specialised rooms, include the following:—

MOVEMENTS. Conduct of operations including organisation of the routeing and diversion of convoys, the employment of support groups at sea and record of own submarine movements. The issue of situation reports.

INTELLIGENCE. Record and analysis of the movements and intentions of the enemy. The issue of intelligence appreciations.

SHIPPING. In conjunction with the Civilian Shipping Authorities, arrangements for individual merchant ships from the end of one voyage until the start of the next. The provision of information of these arrangements to enable subordinate headquarters to control the ships' movements.

ESCORTS. Movements of, and arrangements for, escorts, and support group ships when not engaged in operations.

PLANS. Preparation of plans for all types of operations.

MINE COUNTERMEASURES. Broad direction of the activities of mine countermeasures forces. Promulgation of safe routes and warnings of danger areas.

METEOROLOGICAL. Issue of weather forecasts and meteorological summaries based on all available information. Preparation of special forecasts for particular operations.

TACTICAL SECTION. Analysis of action reports in consultation with Intelligence. Development of new tactics in consultation with Tactical Schools and seagoing Commanding Officers.

OPERATIONAL RESEARCH. Analysis, mainly statistical, of the various operations being conducted, and deduction from this analysis of improved operational methods.

The Exercise of Operational Command

23. Operational Command is exercised in three planes:—

(*a*) THE COMMON DOCTRINE FOR THE NAVY. This is promulgated by the Admiralty in *The Fighting Instructions* and other books. It is based on experience in the Fleet and is kept up-to-date by reports from Commanders-in-Chief on current practice at sea.

(*b*) ORDERS AND INSTRUCTIONS TO A PARTICULAR FLEET. These contain the Commander-in-Chief's directions on:—

(i) the application of, and modifications to, the Common Doctrine to suit local conditions,

(ii) orders and instructions for particular operations.

(*c*) ORDERS AND INSTRUCTIONS TO A PARTICULAR FORCE OR GROUP. These are issued by the Force or Group Commander and consist of:—

(i) instructions on the application of the Common Doctrine, as amended by the Commander-in-Chief, to the particular circumstances of the task or role of the Force or Group;

(ii) detailed orders and instructions for particular operations.

(*b*)(i) and (*c*)(i) are normally issued as Standing Orders. (*b*)(ii) and (*c*)(ii) may be issued in writing, by signal or even orally, depending on the urgency of the matter in hand.

The combination of all three planes of command should be such that all subordinate commanding officers clearly understand what their operational commander would wish them to do in any given circumstances.

24. ORDERS AND INSTRUCTIONS. The directions given for a particular operation may be either orders or instructions.

Orders prescribe in detail the action to be taken by the various units and are issued when precise co-ordination is needed.

Instructions are more widely drawn and leave more to the discretion of subordinates.

Orders and instructions may be either oral, signalled or written, the last being preferable whenever circumstances admit. When they are oral, the substance should be recorded in writing, both by the commander and by his subordinates, as soon afterwards as possible, time and date being added. This is particularly important when orders are given by telephone or voice communication. It is of assistance to both the originator and the recipient if the text of orders and instructions is arranged according to an accepted pattern. Information on the drafting of orders and instructions is contained in the *Naval Staff Handbook* (B.R. 1984).

25. SIGNAL COMMUNICATIONS. Written orders and instructions cannot completely provide for the operation of maritime forces; urgent matters which arise subsequent to the issue of such orders and instructions have to be dealt with by signal. An efficient communications system is therefore vital to the effective exercise of operational command.

An operational commander must ensure that his communications systems are not over-loaded and are able to transmit urgent messages without delay. Excessive signalling may occur when subordinates have an inadequate understanding of their commander's intentions; it is therefore important that orders and instructions should be clear and unambiguous.

The principles governing signal communications are laid down in Allied Communications Publications (ACPs).

Command of Particular Operations

26. AMPHIBIOUS OPERATIONS. An amphibious operation is a combined operation by sea and land forces with associated air support. Instructions for major amphibious operations are issued by the Chiefs of Staff Committee. These instructions will be based on plans prepared by the Joint Planning Staff or by the Theatre Commander concerned.

27. Command of an amphibious operation can take either of the following forms, the choice depending on circumstances, and to some extent, on personalities:—

JOINT COMMAND. The commanders of each Service participating are jointly responsible for the operation as a whole. This form is favoured by the British and may be expected in operations involving British forces only.

UNIFIED COMMAND. All forces taking part in an amphibious operation come under the command of one officer. This officer has sole responsibility for the conduct of the operation. He may be a Supreme Commander with the commanders of the separate services taking part subordinate to him; or he may be the commander of one of the participating services, probably the service playing the major part in the operation. In the latter case, Joint Command will normally be established during the planning of the operation and Unified Command during the initial stages of the operation itself. The Unified Command system is preferred by the United States, and is most likely to be employed in operations involving forces of more than one nation. It may also be used in small-scale amphibious operations (e.g., raids) involving British forces only. Unified Command, when used, is normally established at Force Commanders' level only; below that level, Joint Command will usually operate.

The subject of Command in Amphibious Operations is dealt with in detail in the *Manual of Combined Operations*.

28. SUBMARINE OPERATIONS. In peacetime, Flag Officer, Submarines, exercises operational command over all submarines in Home waters, keeping the area Commanders-in-Chief informed of his intentions. Submarines abroad are under the command of the Commander-in-Chief of the Station on which they are serving.

In war, the same arrangements would apply for submarines which remain under British command. Some submarines would, however, be assigned to the Allied Command; the arrangements for these are described in the next chapter.

CHAPTER 10

Allied Defence Organisation and System of Command

> In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack.
>
> Article 3 of the North Atlantic Treaty

1. It was explained earlier that the defence of the United Kingdom, her colonies and dependencies and essential merchant shipping is now closely bound up with the three Regional Defence Organisations to which the United Kingdom belongs—the North Atlantic Treaty Organisation (N.A.T.O.), the South-East Asia Collective Defence Treaty Organisation (S.E.A.T.O.) and the Baghdad Pact.

2. Of these three organisations, the North Atlantic Treaty Organisation is the only one which at present has fully developed defence machinery and a command system. The other two—South East Asia Collective Defence Treaty Organisation and the Baghdad Pact—were formed more recently with the object of encouraging countries in South East Asia and the Middle East to resist further Communist expansion in the Cold War. The main activities of these organisations have therefore been in the political, rather than the military, sphere.

The following paragraphs describe in outline the military machinery of N.A.T.O. Should it later become necessary for the other two organisations to develop such machinery, it may well be on similar lines.

Provision of Forces for N.A.T.O.

3. Each year, the North Atlantic Council carries out an " Annual Review " of N.A.T.O. forces, as a result of which each member nation is asked to contribute specified forces for the defence of the N.A.T.O. area.

These forces fall into three categories:—

ASSIGNED FORCES. Forces in being which have been placed under the operational command of a N.A.T.O. Commander.

FORCES EARMARKED FOR ASSIGNMENT. Forces which member nations have agreed to assign to the operational command of a N.A.T.O. Commander at some future date in peace, or in the event of war.

FORCES EARMARKED FOR ASSIGNMENT ON MOBILISATION. Forces specifically designated by member nations for assignment to a N.A.T.O. Commander in the event of mobilisation or war.

Forces assigned to a N.A.T.O. Commander come under his *operational* command, but remain under their own national command for administration (i.e., welfare, discipline and logistics). Thus, for example, the Supreme Allied Commander, Atlantic (paragraph 13) would be responsible for the operation and employment of R.N. ships assigned to his command; the Admiralty (through the appropriate R.N. Senior Officer) would be responsible for their administration and supplies, and would have no control over their operation.

4. INFRASTRUCTURE. One of the new expressions which has come into use with the formation of N.A.T.O. is " infrastructure ". This term means all fixed installations which are necessary for the effective deployment and operation of armed forces, e.g., war headquarters, airfields, fuel tanks, radar warning stations, port installations, etc.

Installations set up for the sole benefit of national forces, and for the defence of the homeland, are known as " national infrastructure " and are paid for out of national budgets.

Installations required for the sole use of the forces of one country in the territory of another are known as " bilateral infrastructure ". Financial arrangements are made direct between the countries concerned, i.e., the " host " and " user ".

Installations set up at the request of N.A.T.O. Commanders for the common use of N.A.T.O. international forces in peace and war are known as " Common infrastructure " and are paid for collectively by member nations.

The Military Organisation of N.A.T.O. (see Diagram 1)

5. As already stated in Chapter 4, the Supreme authority of N.A.T.O. is the North Atlantic Council which is in permanent session in Paris.

The Senior authority of the N.A.T.O. military organisation is the North Atlantic Military Committee which consists of one of the Chiefs of Staff (who represents the collective view of himself and his colleagues) of all the member nations. It is clearly not practicable for the Military Committee to be in permanent session, and it therefore meets only when summoned by the Chairman; this is usually a day or two before the North Atlantic Council meets at ministerial level.

6. To deal with day-to-day business and to provide rapid decisions in military strategic matters, there are two military authorities—the Military Representatives Committee and the Standing Group—both of which are located in Washington .

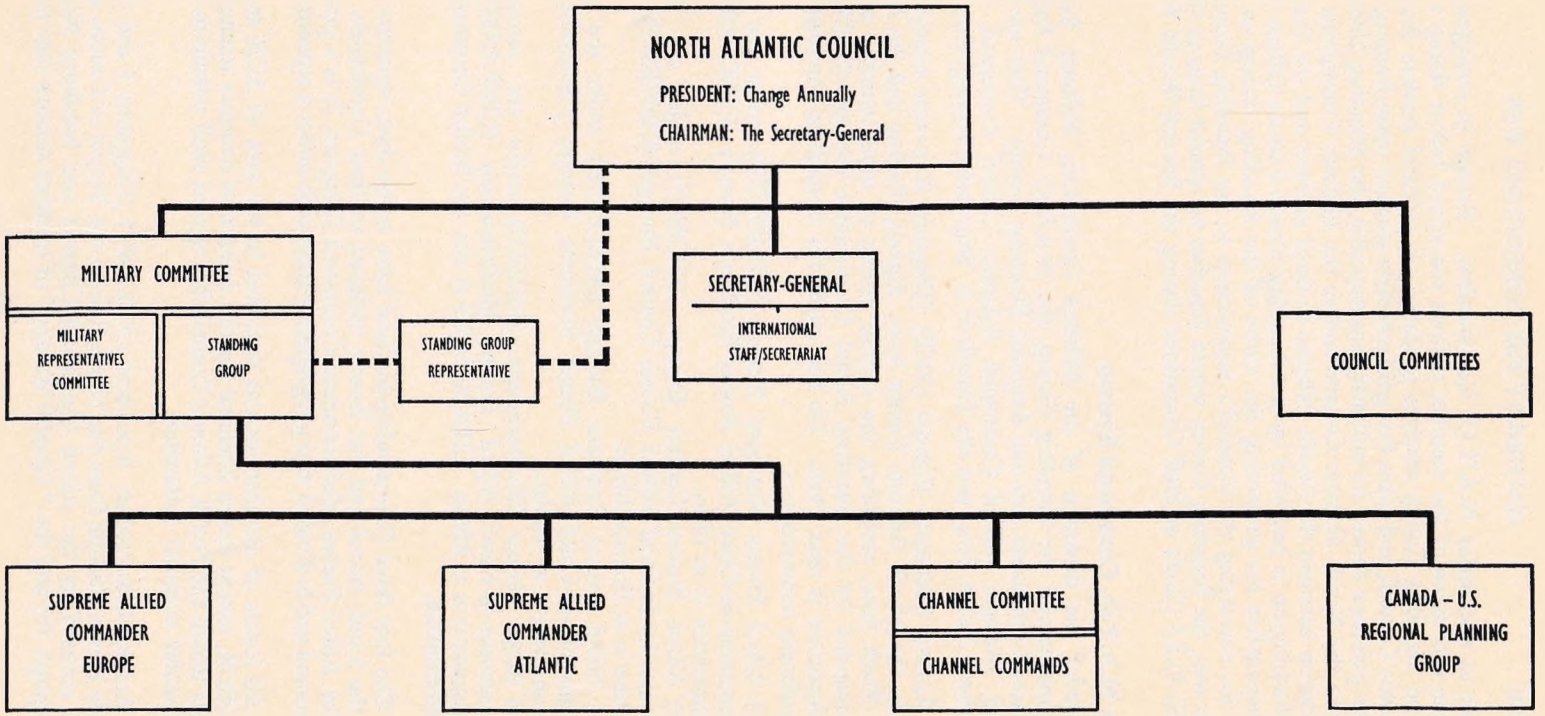
7. The Military Representatives Committee consists of one representative of the Chiefs of Staff of each member nation. These representatives are authorised to deal with military matters requiring the consideration of their national Chiefs of Staff or Governments, and to signify national comments or approval. When the Military Committee is not in session (i.e., most of the time), the Military Representatives Committee is authorised to deal with all military matters except those which are so important as to require consideration by the Military Committee itself.

8. The Standing Group consists of representatives of the Chiefs of Staff of France, the United Kingdom and the United States of America (the British member is also the Head of the British Joint Services Mission in Washington). It acts as the executive agent of the Military Committee, and also as the steering body and executive agent of the Military Representatives Committee. It is responsible for higher strategic direction and it is therefore the superior military authority to which the major N.A.T.O. Commanders are responsible. It also determines the military requirements of N.A.T.O. forces. In carrying out its work, the Standing Group is required to take full account of the views of the Military Committee and the Military Representatives Committee. It is therefore the normal practice for the Standing Group to consult and obtain the approval of the Military Representatives Committee before finalising its recommendations.

To enable the Standing Group to perform the Command functions allocated to it by the North Atlantic Council, it is authorised to issue orders and instructions

NATO CIVIL AND MILITARY ORGANIZATION
NOVEMBER 1957

Diagram I



direct to the major N.A.T.O. Commanders. Except in emergency, it would obtain the views of the member nations concerned before doing so.

The Standing Group receives guidance on political matters from the North Atlantic Council, and takes this guidance into account when framing its decisions. If the guidance should be militarily unacceptable, the Standing Group represents this to the North Atlantic Council and to the Military Committee.

Liaison between the North Atlantic Council in Paris and the Standing Group in Washington is provided by the Standing Group Liaison Officer in Paris. He is responsible for presenting the views of the Standing Group to the Council, and for conveying the Council's instructions to the Standing Group.

In war, the Standing Group would function on similar lines to the Combined (U.K.-U.S.) Chiefs of Staff Committee during the Second World War.

The N.A.T.O. Command System

9. Under the direction of the Military Committee, Military Representatives Committee and the Standing Group, the N.A.T.O. Command System consists of three Commands and one Regional Planning Group. They are Allied Command, Europe; Allied Command, Atlantic; Allied Command, Channel and Southern North Sea; and the Canada-U.S. Regional Planning Group.

10. Allied Command Europe (ACE) (Diagram 2) covers continental Europe within the North Atlantic Treaty Area, Algeria, Turkey and the Mediterranean and Black Seas, excluding the coastal waters of most member nations. It is commanded by the Supreme Allied Commander Europe (SACEUR), whose headquarters is near Paris. He has under his immediate command four major subordinate commands:—

(*a*) Allied Forces Northern Europe (AFNORTH) under the command of Commander-in-Chief Allied Forces Northern Europe (CINCNORTH) whose headquarters is at Oslo.

(*b*) Allied Forces Central Europe (AFCENT) under the command of Commander-in-Chief Allied Forces Central Europe (CINCENT) whose head quarters is at Fontainebleau.

(*c*) Allied Forces Southern Europe (AFSOUTH) under the command of Commander-in-Chief Allied Forces Southern Europe (CINCSOUTH) whose headquarters is at Naples.

(*d*) Allied Forces Mediterranean (AFMED) under the command of the Commander-in-Chief Allied Forces Mediterranean (CINCAFMED), whose headquarters is at Malta. CINCAFMED is also the British Commander-in-Chief, Mediterranean.

11. The first three Commanders-in-Chief have under them separate Commanders for the Land, Naval and Air Forces assigned to their Commands.

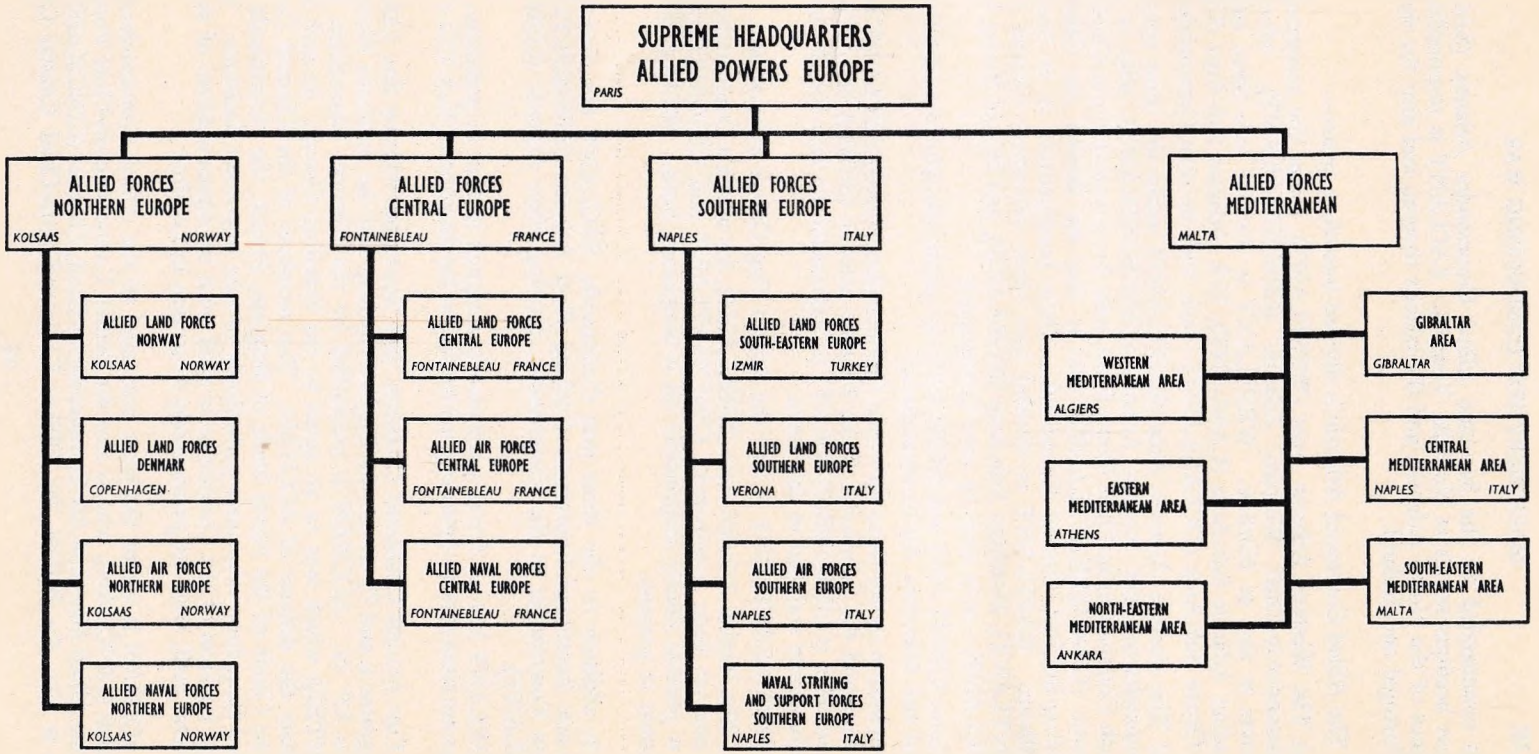
The Allied Forces Mediterranean Command (Diagram 3) is a purely maritime command and is divided into geographical areas each under a separate commander.

12. All forces of member nations stationed in the area of ACE are assigned to SACEUR, except forces intended for the defence of overseas territory, and other forces which the North Atlantic Council has agreed shall remain in peace and/or war under national command.

13. Allied Commander Atlantic (ACLANT) (Diagrams 4 and 5) covers the whole North Atlantic from the North Pole to the Tropic of Cancer, excluding the area covered by the Allied Command Channel and Southern North Sea (see paragraph 16) and the " Coastal Waters " of member nations (see paragraph 20).

ALLIED COMMAND EUROPE — NOVEMBER 1957

Diagram 2



It is commanded by the Supreme Allied Commander Atlantic (SACLANT), whose headquarters is at Norfolk, Virginia. SACLANT is responsible for the defence of the North Atlantic, and the islands therein, and also for the defence of Portugal and Iceland.

14. The Allied Command Atlantic is divided into three areas:—

(*a*) The Western Atlantic Area (WESTLANT), under the command of the Commander-in-Chief Western Atlantic (CINCWESTLANT), whose headquarters is also at Norfolk. WESTLANT is divided into three sub-areas—Canadian Atlantic Sub-Area (CANLANT), U.S. Atlantic Sub-Area (USLANT) and Ocean Sub-Area (OCEANLANT)—each with its own Commander.

(*b*) The Eastern Atlantic Area (EASTLANT) under the joint command of Commander-in-Chief Eastern Atlantic (CINCEASTLANT), who is also the British Commander-in-Chief Home Fleet, and Air Commander-in-Chief, Eastern Atlantic (CINCAIREASTLANT), who is also the British Air Officer Commanding-in-Chief Coastal Command. Their headquarters is at Northwood, Middlesex. EASTLANT is divided into three sub-areas—Central Sub-Area (CENTLANT), Northern Sub-Area (NORLANT), and Bay of Biscay Sub-Area (BISCLANT)—each with its own Commander.

(Note: CENTLANT and NORLANT are under the joint command of British Naval and Maritime Air Commanders.)

In addition to the three Sub-Area Commanders, CINCEASTLANT has under his command the Submarine Force Eastern Atlantic (SUBEASTLANT), whose Commander (COMSUBEASTLANT) is responsible to him for the operations of submarines assigned to this force.

COMSUBEASTLANT is also the British Flag Officer Submarines.

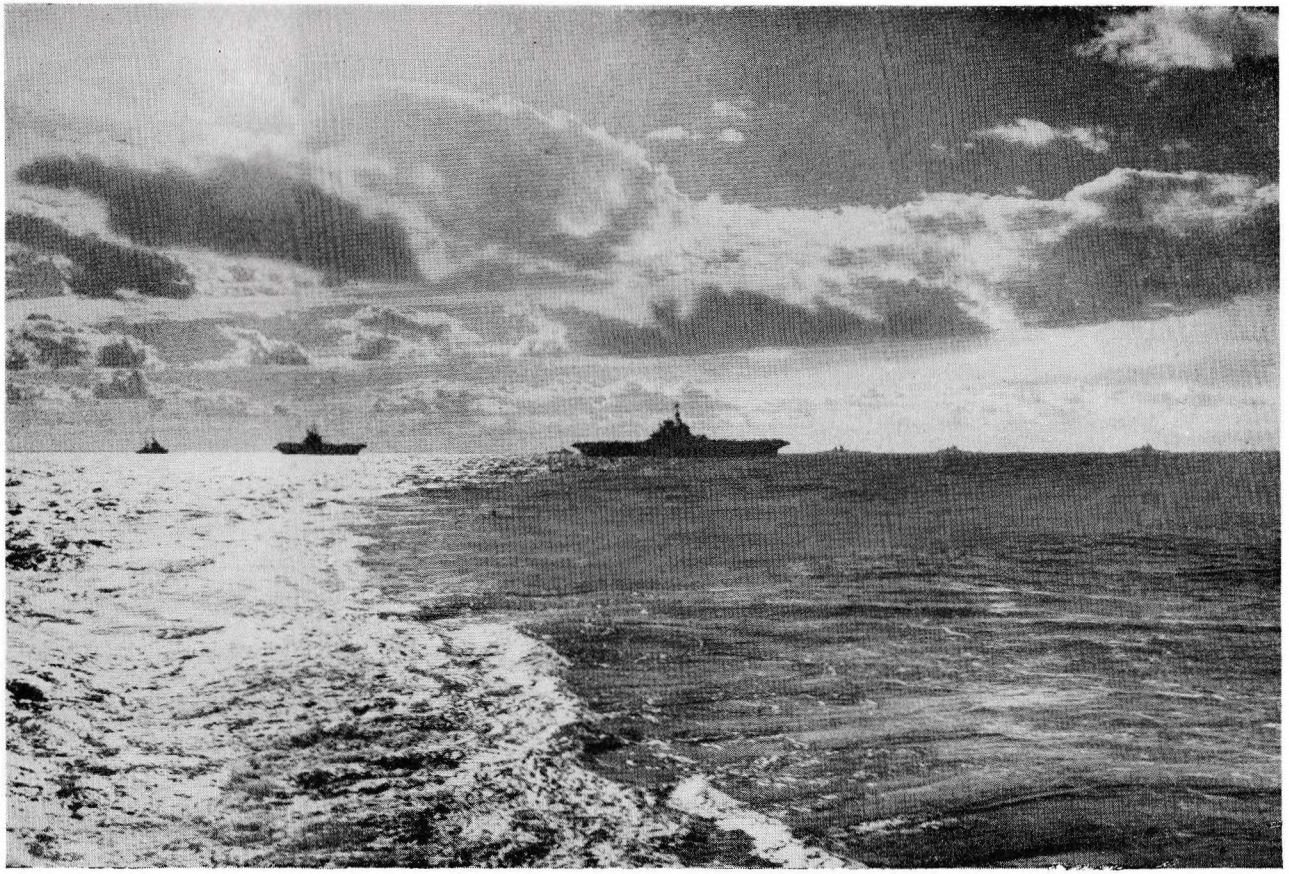
(*c*) The Iberian Atlantic Area (IBERLANT), for which a Commander-in-Chief has not yet been nominated; CINCEASTLANT and CINCAIREASTLANT are at present jointly responsible on a temporary basis. IBERLANT has no sub-areas at present.

15. In addition to the three area Commands, SACLANT has directly under him one functional Command—Striking Fleet Atlantic (STRIKFLTLANT)—whose Commander is the Commander, Striking Fleet Atlantic (COMSTRIKFLTLANT).

SACLANT has no forces permanently assigned to him in peacetime, though forces are from time to time assigned to him for the duration of N.A.T.O. exercises.

16. The Allied Command Channel and Southern North Sea (ACCHAN) (Diagrams 6 and 7) covers the English Channel and the Southern North Sea as far as 55° N. ACCHAN is controlled by the Channel Committee (CHANCOMTEE) which acts as an agent to the Standing Group; its task is to coordinate the defence of ACCHAN. The members of the Channel Committee are the Chiefs of the Naval Staffs of Belgium, France, the Netherlands and the United Kingdom, who meet periodically to take important decisions. The day-to-day business of the Committee is dealt with by representatives of the Chiefs of Naval Staff, who are permanently in session in London.

17. ACCHAN is under the joint command of the Allied Commander-in-Chief, Channel (CINCHAN), who is also the British Commander-in-Chief Portsmouth, and the Allied Maritime Air Commander-in-Chief, Channel (CINCMAIRCHAN), who is also the British Air Officer Commanding-in-Chief Coastal Command



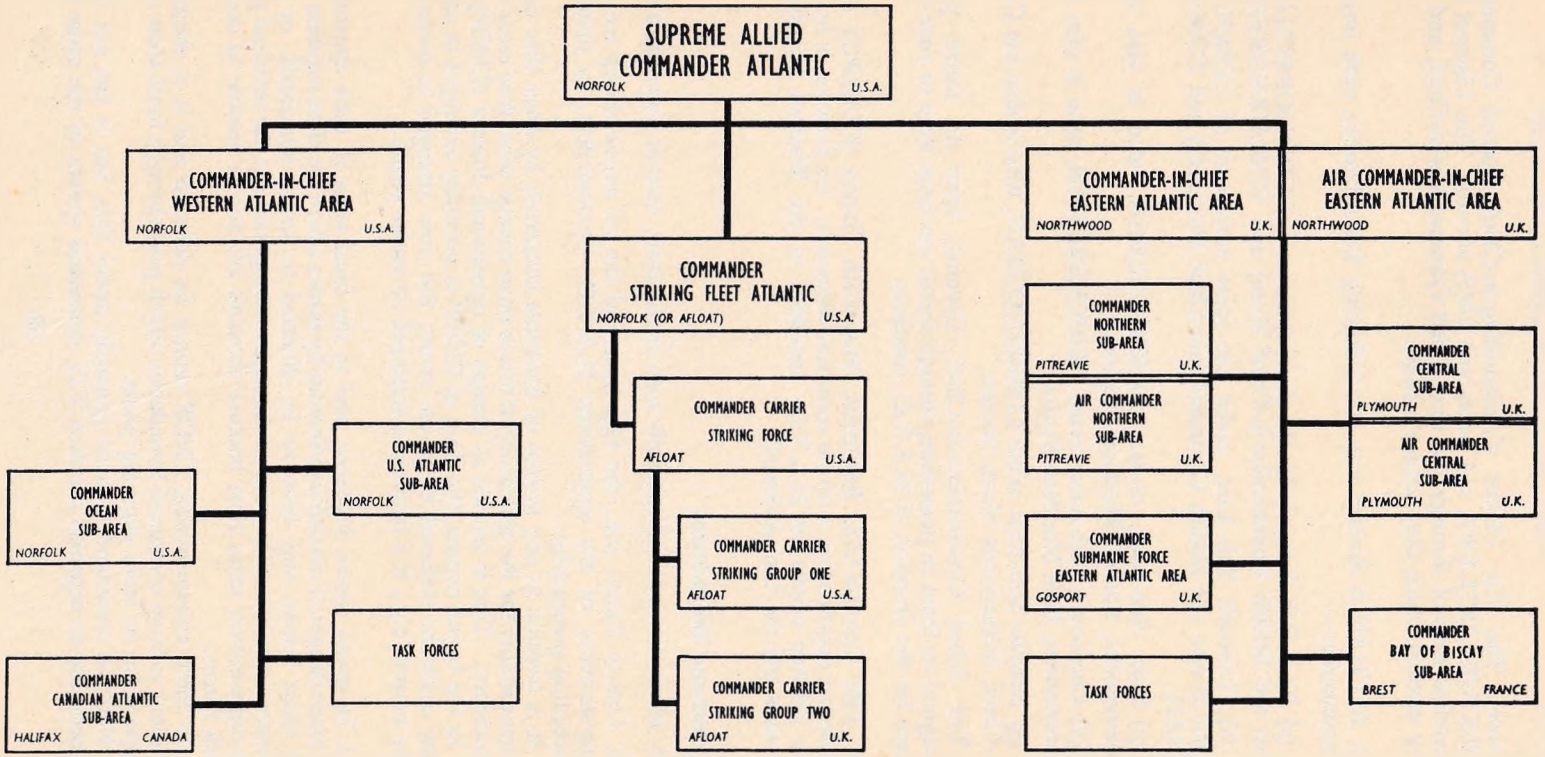
8. A DISTANT SUPPORT FORCE DURING THE SECOND WORLD WAR



9. An A/S close support force

ALLIED COMMAND ATLANTIC — NOVEMBER 1957

Diagram 4



(Note: The Air Officer Commanding-in-Chief Coastal Command is also CINCAIREASTLANT, *vide* paragraph 14(*b*) above). The Channel Committee exercises control through the two Allied Commanders-in-Chief, and deals with any matters which they cannot resolve.

18. ACCHAN is divided into the following five sub-areas, each under its own Commander:—

(*a*) Nore Sub-Area, under the joint command of COMNORECHAN (who is also the British Commander-in-Chief Nore) and COMAIRNORECHAN.

(*b*) Plymouth Sub-Area, under the joint command of COMPLYMCHAN (who is also the British Commander-in-Chief Plymouth) and COMAIRPLYMCHAN.

(*c*) Brest Sub-Area, under COMBRESTCHAN, who is also the French Commander, Second Maritime Region.

(*d*) Cherbourg Sub-Area, under COMCHERCHAN, who is also the French Commander, First Maritime Region.

(*e*) Benelux Sub-Area under COMBENECHAN, who is also the Commander-in-Chief, Netherlands Home Station.

The Allied Commanders-in-Chief, Channel, have no forces permanently assigned to them in peacetime, though forces are from time to time assigned to them for the duration of N.A.T.O. exercises.

19. The Canada-U.S. Regional Planning Group (CUSRPG) is a purely planning organisation with no command structure. Its function is to co-ordinate the defence efforts of N.A.T.O. countries in the Western Hemisphere (i.e., Canada and the United States).

Command Boundaries

20. Maritime areas fall naturally into ocean areas, coastal waters and islands.

21. Ocean Areas (i.e., the high seas and the air above them) are wholly the responsibility of the appropriate N.A.T.O. Commanders, as detailed in the preceding paragraphs.

It is implicit in any system of maritime command by areas that control (i.e., responsibility for the operation) of forces must change when they cross a command boundary. This is known as change of operational control (CHOP).

In the broad oceans, the time of CHOP is normally arranged in advance, and may easily be deferred if, in the event, the time arranged is inconvenient for any reason, e.g., if a convoy is scattered or under attack.

22. In *coastal waters*, however, and in the focal areas in their approaches, there is more danger of mutual interference by forces which are close together. Convoys in these waters may have to be diverted to avoid minefields, or have their destinations altered because of damage or congestion at the terminal ports; such re-organisation takes time because convoys are not as flexible to control as are task forces.

In these circumstances, CHOP cannot be deferred and it is therefore inconvenient to have command boundaries which pass through focal areas or cross the approaches to main shipping ports.

National command systems generally avoid this, but it has not been found practicable to organise the N.A.T.O. command system in the same way.

23. In the N.A.T.O. area, the coastal waters of some member nations are under national (as opposed to N.A.T.O.) Command. These nations have insisted on this because:—

(*a*) national sentiment requires that forces employed in the vicinity of the home territory should be national forces;

(*b*) shipping movements in these waters must be closely co-ordinated with port and inland transport activities which are under national control.

24. In order to achieve close co-ordination between N.A.T.O. (ocean area) Commanders and these National (Coastal Waters) Commanders, the Military Committee of N.A.T.O. has laid down the following principles:—

(*a*) The extent and boundaries of coastal areas must be decided by agreement between the nations concerned and the N.A.T.O. ocean area commanders.

(Note: The limits of coastal waters depend on such factors as the physical configuration of the coast, the distance which coastal radar cover extends to seaward, the distance off-shore of coastal shipping routes and defensive minefields, and the distance to which searched channels extend to seaward.)

(*b*) Operations, including convoy operations, in coastal waters must be co-ordinated with operations in adjacent ocean areas.

(*c*) N.A.T.O. Ocean Area Commanders are responsible to National Coastal Waters Commanders for:—

(i) keeping them informed of plans for ocean areas which affect national plans for coastal waters;

(ii) keeping them informed of operations in ocean areas which may extend into coastal waters, but which, by agreement, will remain at all times under the control of the N.A.T.O. Commander;

(iii) delegating to the National Commander the conduct of certain operations, as mutually agreed.

(*d*) National Coastal Waters Commanders are responsible to the N.A.T.O. Ocean Area Commanders for:—

(i) co-ordinating plans for, and operations in, coastal waters with those for ocean areas. They will conduct such convoy and other operations as are delegated to them by the N.A.T.O. Commander;

(ii) providing base facilities and logistic support, as mutually agreed, for the forces of the N.A.T.O. Commander.

25. With reference to paragraph 24(*a*), it has not been practicable in all cases to establish a geographical boundary between a national coastal waters command and the adjacent N.A.T.O. ocean area command. Where such a boundary has not been established, it has been agreed that, in coastal waters, the National Commander will be responsible for some operations (e.g., defence of coastal convoys, minesweeping) and the N.A.T.O. Commander for others (e.g., defence of ocean convoys).

26. The difficulty of achieving perfect co-ordination between the National Coastal Waters Commanders and the N.A.T.O. Ocean Area Commanders has, in many cases, been overcome by appointing the Coastal Waters Commanders to act also as the Commanders of the adjacent ocean areas. Indeed, in some cases, the same Officer acts as the N.A.T.O. Commander of two ocean areas adjacent to his National coastal waters command. For example, the Western Approaches to the English Channel normally contain a very high density of shipping; the Admiral, Western Approaches (the British wartime title of C.-in-C. Plymouth)

is both COMCENTLANT (under CINCEASTLANT) and COMPLYMCHAN (under CINCHAN) as well as being responsible for the British coastal waters in the Western Approaches Command.

27. ISLANDS or groups of islands, within the N.A.T.O. area which belong to individual N.A.T.O. nations and provide facilities for N.A.T.O. forces, are of sufficient importance to necessitate their denial to an enemy.

" Island Commanders " who are appointed by the member nations concerned, are responsible to their national authorities for mine-countermeasures and air defence, and to the appropriate N.A.T.O. Commander for the conduct of operations in mutual support for the defence of their islands.

N.A.T.O. Commanders of the surrounding ocean areas are responsible for countering enemy operations in approaches to Islands, and for co-ordinating operational and logistical plans.

The Principle of Supreme Command

28. The reader will have noticed in Chapter 7 that in theatres where only British forces are employed, command is exercised by the three service Commanders-in-Chief working as a Committee. Each Commander-in-Chief conducts the operations of his service in accordance with the theatre strategy agreed between them, and for this strategy they are jointly responsible to the British Chiefs of Staff Committee in London. This is known as Joint Command.

29. Where the forces of one or more major allied powers are fighting together, the committee system becomes too cumbersome, and experience has shown that it is necessary for a Supreme Commander to be appointed for the theatre.

The Supreme Commander is responsible to such allied authority as may be set up for the strategic direction of the war as a whole; in the case of N.A.T.O., this authority is the Standing Group.

30. The Supreme Commander bears the ultimate responsibility for all operations in his theatre and for the formulation of theatre strategy; he is advised by his subordinate Commanders-in-Chief, who are responsible for the conduct of operations in accordance with the Supreme Commander's directions.

One of the main advantages of the system of Supreme Command is that the Supreme Commander can deal with all political and economic problems affecting his theatre, leaving the Commanders-in-Chief free to concentrate on the conduct of operations.

PART IV—MARITIME WARFARE

CHAPTER 11

Maritime Strategy

> The use of the Navy is great in peace, greater in war. Thereby traffic and intercourse betwixt friends is maintained, victuals that go to the enemy are stopped, our wants of victuals, arms, munitions and other necessaries are supplied; the enemy's coast is spoiled, our own defended.
>
> Matthew Sutcliffe: *The Practice, Proceedings and Laws of Armes* (1593)

The Fundamental Aims of British Maritime Strategy

1. A nation whose territory borders the sea makes use of the sea by means of ships for two main purposes—transport and fishing. When such a nation is at war with another nation whose territory also borders the sea, its purpose, as far as the war at sea is concerned, is to continue to use ships for transport and fishing and to prevent the enemy from doing so. In war, " transport " includes moving forces and war material to overseas theatres.

2. As an island nation, the United Kingdom has always relied far more on making use of the sea than have such continental powers as Germany and the Soviet Union.

In war, any enemy attack on the United Kingdom must cross the sea; food sufficient for the population and raw materials sufficient for the war industries must be brought by sea in ships; and the bulk of the forces to fight the enemy on land must be carried across the sea in ships.

Although the development of aviation has reduced the importance of the sea as a defensive barrier, it has not greatly affected the use of ships for transporting large numbers of men and large quantities of materials.

3. Maritime considerations have therefore greatly influenced British grand strategy. The ultimate aim of grand strategy is to break the enemy's will to resist. The role of maritime strategy is to contribute to the achievement of this aim by employing maritime forces:—

(*a*) to defend the United Kingdom from attack;
(*b*) to defeat all enemy attempts to interrupt merchant shipping plying between the United Kingdom and countries from which essential supplies are obtained;
(*c*) to prevent the enemy from using merchant ships;
(*d*) to launch attacks from the sea on enemy or enemy-held territory.

These are the four fundamental aims of British Maritime Strategy.

4. Developments in aircraft and ballistic missiles, and in the weapons which both can carry, may reduce the importance of maritime forces in the defence of the United Kingdom in a future global war. Moreover, the duration of such a war may possibly be so short that achievement of the second and third fundamental aims (to defeat enemy attacks on merchant shipping and to prevent the enemy from using merchant ships) may not be needed.

At no time in the past, however, has the course of a war been accurately predicted. If a future global war were to continue after an initial mutual thermo-nuclear bombardment, or if, for any reason, only " conventional " weapons

were used, it would still be necessary for the United Kingdom to achieve the four fundamental aims of British maritime strategy.

5. To achieve each of these fundamental aims, it is necessary to adopt various courses of action. The following paragraphs discuss the courses of action adopted in past wars; important technical developments since the end of the Second World War; and the possible effect of these developments on the courses of action to be adopted in a future war.

The particular operations to implement the various courses of action are mentioned very briefly; they are discussed in more detail in Chapters 13-18.

Courses of Action adopted in past wars to achieve the fundamental aims

6. DEFENCE OF THE UNITED KINGDOM AGAINST ATTACK. An enemy who wished to conquer the United Kingdom could only do so effectively by launching a seaborne invasion or by preventing her from obtaining essential supplies from overseas. During the Second World War, heavy attacks were carried out on the country by aerial bombardment, in which aircraft, both piloted and pilotless, and ballistic missiles were used, but this attack was not on a sufficient scale to break the British will to resist.

7. To carry out a successful invasion, an enemy had to achieve three things. First, he had to assemble the forces and the ships and craft in which to transport them; second, he had to convey them safely to their landing points; and third, when ashore, he had to supply and reinforce them by sea.

8. These three requirements indicate the courses of action open to the defending maritime forces—to attack the invasion forces at source,* to attack them at sea whilst on passage, and to prevent supplies and reinforcements reaching them by sea if they succeeded in landing.

9. Attacks at source were carried out by air or surface bombardment of invasion craft and port installations and, occasionally, by minelaying inside port defences.

10. To attack invasion forces on passage, maritime forces were deployed in positions covering likely invasion routes from which they could try to intercept the enemy as soon as intelligence of his movements was received. The aim of the maritime forces was to destroy or disorganise the invasion forces and so prevent them from achieving a landing.

11. With insignificant exceptions, no enemy invasion force in modern history succeeded in landing in the United Kingdom. Had such a force done so, the aim of British maritime forces would have been to ensure, by continuous attacks on its supply ships both at sea and in their anchorages, and on the forces protecting them, that no supplies or reinforcements could reach it.

12. THE DEFEAT OF ENEMY ATTACKS ON MERCHANT SHIPPING. The United Kingdom's reliance in war on supplies from overseas has already been mentioned. Merchant ships have therefore been one of the enemy's main targets, because their destruction, or the sustained interruption of their movements, would quickly lead to the country's starvation and defeat.

13. In the days of sail, the main threat to merchant ships came from large numbers of fast, lightly armed warships and privateers, which were able to capture unescorted merchantmen.

* An " attack at source " is an attack on forces and/or facilities at an enemy base. Typical distributions of peace and war shipping can be seen in Diagrams 8 and 9.

In the early stages of the First World War, the main threats were from cruisers and armed merchantmen; later, submarines, as their range and weapon carrying capacity increased, became the most serious menace. In coastal waters, the threats were from submarines, mines, light surface craft and, latterly, aircraft.

During the Second World War, all these threats reappeared. Aircraft were used for direct attacks on merchant ships at sea and, in addition, for scouting and "homing" submarines on to their targets. Aircraft were also employed in laying mines in port approaches.

14. The courses of action adopted to defeat enemy attacks on merchant shipping were:—

(*a*) Attacks at Source.
(*b*) Transit Patrols.
(*c*) Area Searches.
(*d*) Escort and Close Support Operations.
(*e*) Control of Merchant Shipping.

The first four courses of action are listed in the order of their proximity to the source of the enemy threat.

15. Attack at Source to destroy enemy forces threatening merchant shipping has always been an ideal method of protecting the shipping, provided such attacks are effective and are not too costly to carry out. In the days of sail, many attacks were carried out on harbours used by privateers; but these had no significant effect on the enemy's operations except when they included the capture and occupation of a harbour and its adjacent territory. The greater power of port defences made it hazardous for ships to attack enemy harbours during the First World War and such attacks as were carried out (e.g., the Zeebrugge Raid of April 1918) were very costly in relation to the results achieved. The development of bomber aircraft enabled many attacks at source to be carried out during the First and Second World Wars on such targets as U-boat pens and building yards. These attacks achieved only limited success, however, and it is now generally considered that some of the effort devoted to them might have been used to better advantage on other types of operations. In contrast, many surprise attacks on ships in harbour achieved considerable success with a comparatively small expenditure of effort.

16. Transit Patrols were patrols operated across waters through which enemy forces had to pass in order to reach their operating areas.

During the sailing ship era, such patrols often took the form of a close blockade of the enemy's bases. Close blockade by surface ships ceased to be practicable in the twentieth century, due to the low endurance of steam ships and their vulnerability to attack by torpedo boats, mines, submarines, and later, by aircraft. A limited degree of close blockade was, however, practicable during both World Wars by submarines, aircraft and mining.

Patrols across transit areas distant from enemy bases were operated by ships and aircraft in both World Wars; these patrols were sometimes reinforced by minefields laid across part of the transit area. Some success was achieved against surface raiders and submarines. When, however, an area of any extent had to be patrolled (e.g., the North Atlantic Straits), the difficulties of maintaining a patrol in sufficient strength, particularly during bad weather, and of detecting enemy forces whose main aim was evasion, were so great that many single ships and most submarines evaded the patrolling forces. It was also difficult to lay an effective mine barrier in deep water. These difficulties were less, and transit

patrols correspondingly more effective, across narrow, shallow stretches of water both shores of which were in friendly hands (e.g., the Strait of Dover during the First World War).

17. AREA SEARCHES were carried out by forces operating independently of merchant ships or convoys in areas where enemy raiders (ships, submarines or aircraft) were thought to be active. These forces followed up intelligence of the movements of enemy units and endeavoured to bring them to decisive action.

Searching forces were more effective against surface raiders than against submarines, which could evade action by submerging. The effectiveness of searching forces was increased if they included aircraft. Area searches for enemy aircraft were seldom profitable.

18. ESCORT AND CLOSE SUPPORT OPERATIONS. The essence of these operations was that they were directly related to the movements of particular merchant ships.

Escort is an operation by maritime forces whose aim is to protect the ship or ships under escort by attacking any enemy which may approach them.

Close Support is an operation by maritime forces whose aim is to attack enemy forces which threaten, or may threaten, in otherwise superior force the ships and escorting forces being supported.

Close supporting forces sometimes joined up with escorting forces; on such occasions they might either integrate with the escort and assume its aim (i.e., to protect the ships being escorted) or they might retain their own identity and their own aim (i.e., to attack any enemy forces which threatened or might threaten the ships and escorting forces).

19. Escort and close support operations required that most ships should be sailed in convoy. A convoy is a number of ships sailing in company; it may or may not have an escort. The main value of a convoy lay in the fact that it concentrated a number of ships at one point. This not only made it harder for the enemy to find his targets, since, at sea, a convoy was little easier to find than a single ship; it also made it practicable for the limited maritime forces to give protection to the ships by operating in the vicinity of the convoy, either as escort or close support forces. The same degree of protection could not be given if the ships sailed independently.

Fast merchant ships were not included in convoys in areas where the main threats were from surface raiders and submarines, because their speed gave them a good degree of protection from these threats. In areas where the threat of air attack predominated, all ships were sailed in convoy.

20. The relative merits of attacks at source, transit patrols, area searches and escort and close support operations as courses of action to defeat enemy attacks on merchant ships have been and still are the subject of acute controversy. It is probably true to say that, in certain circumstances, each method may be the best way of frustrating the enemy's attack. Nevertheless, the following facts have emerged from analysis of previous war experience:—

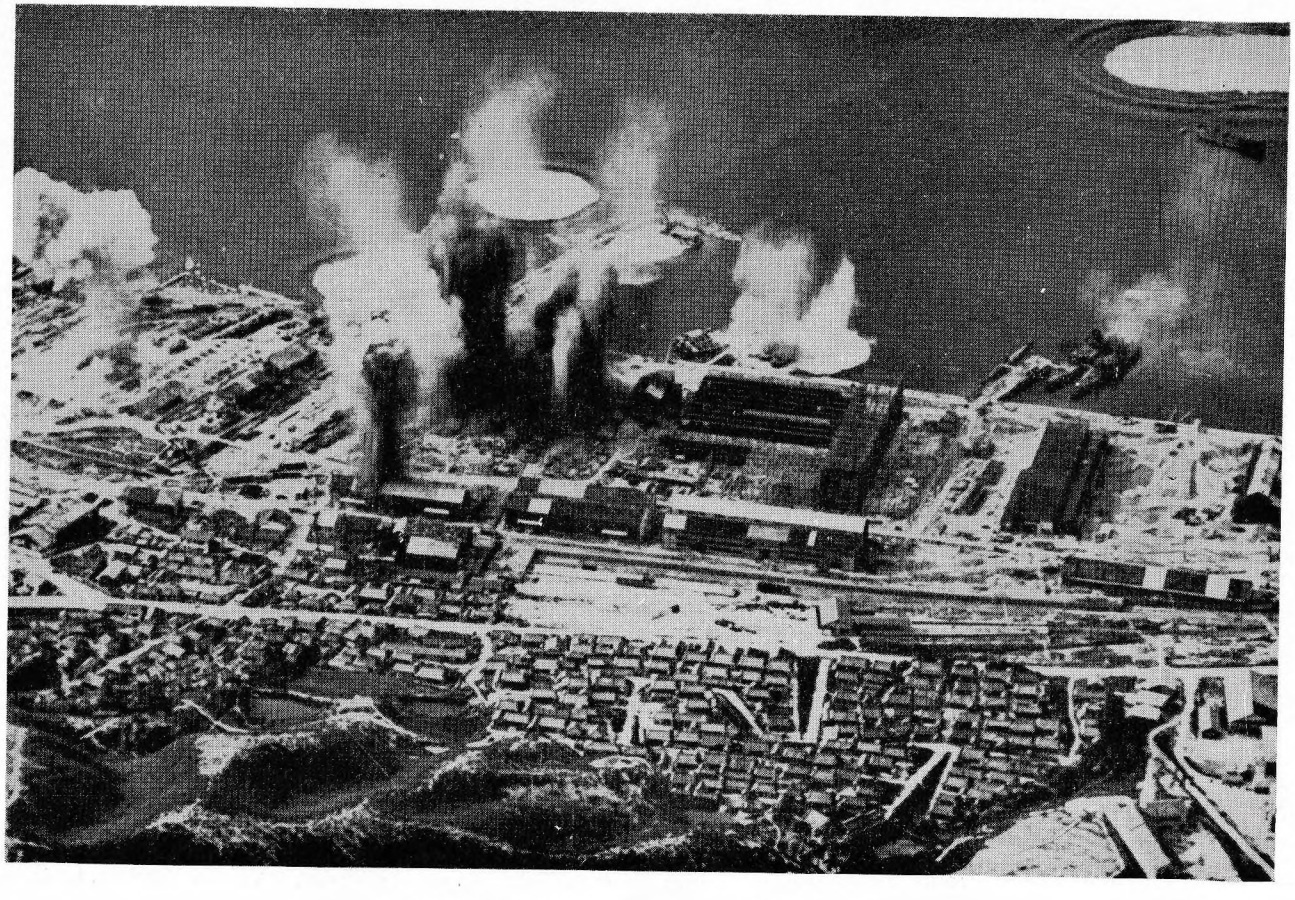
(*a*) Whenever there have been heavy losses of merchant ships in a particular area and convoys have been introduced in that area as a protective measure, the loss rate* for ships in convoy has been much less than the loss rate for ships sailed independently.

(*b*) Forces employed on escort and close support operations have consistently been more successful than any others in bringing the enemy to decisive action.

* The " loss rate " is the percentage of ships sailed which are sunk.



6. TARANTO AFTER ATTACK BY NAVAL AIRCRAFT ON WARSHIPS IN HARBOUR



7. Naval aircraft attack on Fuge, Japan

21. Control of merchant shipping enabled the Government, through the Civilian Shipping Authorities:—

(*a*) to order what cargoes ships were to carry and at what ports they were to load or discharge;

and through the Naval Authorities:—

(*b*) to order which routes ships were to follow and when they were to sail and arrive;

(*c*) to divert ships at sea away from dangerous areas;

(*d*) to order which ships were to sail in escorted convoy, which in unescorted convoy, and which independently.

Control of merchant shipping thus enabled the Naval Authorities to know precisely, at any one time, the number of merchant ships under threat of attack, their whereabouts and their destinations.

In short, control enabled the Government to employ merchant ships in the ways most needed to support the country's war effort, and also enabled the Naval Authorities to co-ordinate the merchant ships' movements with those of the protecting maritime forces, and the expected dispositions and movements of enemy forces.

22. Prevention of the use of Merchant Shipping by the Enemy. Britain's wartime opponents have usually been continental powers to whom overseas trade was less important than it was to Britain. Nevertheless, such powers depended on shipping to bring in supplies of " strategic " materials not available in their own countries and on coastal shipping as part of their internal distribution systems. When these powers embarked on overseas military campaigns (e.g. the Axis campaign in North Africa 1940-43) they had to use ships to keep their forces adequately supplied.

The destruction of enemy merchant and military supply ships or the interruption of their movements has therefore always been a fundamental aim of British maritime strategy. The courses of action to achieve this have been attacks at source, i.e., attacks on ships in harbour and on port installations and building-yards, and attacks on ships at sea.

23. Direct attack on ships in harbour was only employed when the targets were of sufficient importance to justify a special operation, though such attacks were sometimes made as part of an operation with a wider aim.

Attacks on port facilities were seldom practicable before the advent of long-range aircraft, which frequently bombed important harbours during the Second World War.

24. Attacks on ships at sea were made by both close and distant blockade forces (paragraph 16) when enemy ships attempted to run the blockade; and by special strike forces of ships or aircraft against particular ships or convoys of which intelligence had been received.

Minelaying by surface minelayers, submarines and aircraft was also carried out. During the Second World War, minelaying by aircraft, in conjunction with air strikes on enemy minesweeping forces and merchant ships, inflicted significant losses and delays on German coastal shipping.

Attacks by aircraft and submarines on Japanese merchant shipping in the Pacific sank and damaged so many ships that Japan's war economy, and her ability to transport and supply her forces, were crippled. These attacks were thus a major factor in forcing Japan to sue for peace.

25. By International Law, merchant ships may only be attacked if they actively resist arrest, are armed or sailing under armed convoy, or are in any way incorporated into the intelligence system of the enemy's armed forces (e.g., if under orders to report sighting warships). During both World Wars, however, the practice of attacking merchant ships without warning, and without providing for the safety of the crews, was widespread; this practice was only adopted by the British in reprisal for unrestricted attacks by German submarines and aircraft.

26. Attacks on Enemy and Enemy-held Territory. Except in the case of war against island nations, which can be defeated by the interruption of essential supplies from overseas, final victory is unlikely to be achieved until the war has been carried into the enemy's territory. In past wars, maritime forces contributed to this aim by attacking " strategic targets ",* by launching amphibious raids and by escorting and supporting invasion forces.

27. Until the operational range of carrier strike aircraft was extended, strategic targets were usually beyond the reach of maritime forces, though on a few occasions, attacks were made by surface bombardment. In the later stages of the Second World War, carrier aircraft were increasingly used for these attacks, particularly against targets in Japan.

28. Amphibious raids played an important part during the Second World War. A small effort devoted to an amphibious raid of short duration not only imposed on the enemy material damage but also required him to maintain a major defensive effort which limited his capacity for offensive operations elsewhere. It was only necessary to repeat these raids sufficiently often and in sufficient strength to ensure that his defensive effort was stretched to the full.

29. The tasks of maritime forces during invasion operations were to protect the invasion forces from sea-borne attack during assembly, to escort them to the landing points, to support them by bombardment during the assault, and, subsequently, to ensure the safe arrival of ship-borne supplies and reinforcements.

Command of the Sea

30. The foregoing paragraphs have stated the fundamental aims of British maritime strategy and the main courses of action adopted to achieve those aims.

It has sometimes been the practice, when discussing maritime strategy, to state that the ultimate aim is to achieve " Command of the Sea ", by which was meant the ability to use ships for one's own purposes and to deny the use of ships to the enemy. This conception coincides with the proposition in paragraph 1 from which were deduced the fundamental aims of British maritime strategy.

The term " Command of the Sea " has, however, sometimes been used in a sense which does not include all these fundamental aims. It is therefore necessary to discuss its meaning more fully.

31. " Absolute " Command of the Sea, in the sense that one's own maritime forces are unchallenged and the enemy is unable to carry out any operations, can only be obtained by the destruction or neutralisation of all the enemy's maritime forces and shipping. This is rarely practicable before final victory.

32. The degree of Command of the Sea which each side will seek to attain during hostilities may therefore be defined as the ability to deploy sufficient maritime

* " Strategic targets " are places situated outside the area of land operations, which are essential to the enemy's war effort. Examples are oil refineries, war factories and important centres of distribution.

forces to ensure that the enemy does not frustrate any military or commercial operations which are necessary to achieve the aims of its maritime strategy.

33. It has usually been the case that one side has possessed stronger maritime forces than the other. In these circumstances, the stronger side exerted its superiority by maintaining a battle fleet in a position from which to intercept that of the weaker side if it tried to frustrate any important operations. In other words, the stronger battle fleet " covered " these operations against the threat of attack by the weaker battle fleet, while seeking always to eliminate the threat by destroying that fleet.

The ability to intercept depended primarily on obtaining accurate and up-to-date intelligence of the enemy's movements at a time when the battle fleet was in a position from which interception was practicable. Weather and geography affected the factors of time and space.

34. The side with the weaker fleet would limit its operations to times and places which did not involve the likelihood of engagement with equal or superior forces. So long as the weaker battle fleet remained " in being " it served three main purposes:—

(*a*) it forced the stronger battle fleet to maintain a superior concentration;

(*b*) it made the stronger side limit its maritime operations to those which could be " covered " by its battle fleet;

(*c*) within limited areas and for limited times the weaker battle fleet was able to support (cover) its own operations against attack by small detachments of the stronger battle fleet.

35. In the past, some naval strategists held that Command of the Sea could be attained outright either by defeating an enemy's main battle fleet in a single decisive engagement or by immobilising it by blockade. This view overlooked the fact that, in addition to their battle fleets, both sides have usually possessed smaller units which had been designed for evasive tactics when confronted with a superior enemy force. By virtue of their capacity for evasion, these smaller units were able to operate in areas " covered " by a hostile battle fleet. In particular, surface raiders, submarines and aircraft, operating singly or in packs, were employed to attack shipping and achieved considerable success chiefly against ships not in convoy.

36. It follows from paragraphs 31 to 34 that by defeating or neutralising the enemy's battle fleet, a superior battle fleet made major contributions to three of the four fundamental aims of maritime strategy, namely:—

(*a*) it protected the home territory against attack, because the enemy could not defend his invasion forces, or their supplies;

(*b*) it enabled its own minor forces to prey on enemy merchant shipping with less fear of attack by superior enemy forces;

(*c*) it prevented the enemy from mounting an effective defence at sea against attacks on his own territory.

37. It follows from paragraph 35, however, that so far as the second fundamenta aim—the defeat of enemy attacks on merchant shipping—was concerned, the " cover " of the main fleet was largely ineffective against minor enemy units which could evade action with it. This was clearly demonstrated:—

(*a*) during the Napoleonic Wars, when, despite the decisive victory of Trafalgar, 6,000 British merchant ships were captured between 1805 and 1815;

(*b*) during the First World War, when, although the German High Seas Fleet was virtually neutralised after the Battle of Jutland, losses of British merchant ships by submarine attack reached a crippling level in 1917;

(*c*) during the Second World War, when, although the German surface fleet never challenged the superiority of the British battle fleet, losses of British merchant ships from submarine and aircraft attack were again extremely serious.

It is of particular interest to note that because the Japanese failed to appreciate the possibilities of a campaign against an enemy's merchant shipping, the United States Navy was able to achieve Command of the Sea in the Pacific during the Second World War by a series of fleet actions.

Independently of this achievement, the United States used submarines and aircraft to attack Japanese merchant ships. As mentioned in paragraph 24, the consequent disruption of shipping movements was a major factor in the collapse of Japan's war effort.

38. Command of the Sea (as defined in paragraph 32) cannot therefore normally be achieved solely by defeating or immobilising the enemy's battle fleet; it is also necessary to deploy specialised forces to defeat attacks on merchant shipping by smaller enemy units.

39. Because it is traditionally associated with the degree of control which can be attained by a battle fleet, and because, under modern conditions, the role of the battle fleet is of decreasing importance, the term " Command of the Sea " is not used in this book. Reference will instead be made to achievement of one or more of the fundamental aims of maritime strategy.

" Command of the Sea " has, however, served in the past both to inspire and to give expression to the unmatched offensive spirit of the Royal Navy.

Technical Developments since the Second World War

40. Scientific and technical developments since the end of the Second World War have been on a scale unparalleled in history. The more important of these developments are:—

The Atomic Bomb. A " nominal " atomic bomb releases energy roughly equivalent to that released by the explosion of 20 kilotons (20,000 tons) of T.N.T.; it is now possible to produce both larger and smaller atomic bombs. The main effects of an atomic bomb explosion are blast (or shock wave), heat, gamma radiation and neutron shower; the intensity of these effects depends on whether the bomb is exploded in the air, on (or near) the surface of the sea, or underwater.

In general terms, the blast from a nominal atomic bomb exploded in the air at a height of 500-2,000 ft. will sink or seriously damage all ships within half a mile; the radiation and neutron shower from the explosion will kill or seriously injure exposed personnel within about the same distance. Personnel under cover will be protected from these effects except when close to the explosion.

A surface burst produces similar effects over a somewhat smaller range.

The shock wave from an underwater burst would sink or cause serious hull damage to ships within a quarter of a mile and the waves produced would cause damage to the structure and fittings within half a mile. Exposed personnel would be killed or seriously injured within one mile.

The Thermonuclear (or Hydrogen) Bomb. This has an explosive force which is measured in megatons (millions of tons) of T.N.T. The most serious immediate damaging effect on ships by such a bomb is blast, but there is also likely to be radio-active " fall-out " which may cover many thousands of square miles. In general terms, ships within three miles of a 20-megaton explosion

would be sunk and serious damage would be sustained within a greater range. Exposed personnel would be killed or seriously injured within eight miles in average weather conditions. Special precautions have to be taken over a very much wider area to avoid casualties and contamination from the effects of the radio-active fall-out.

NUCLEAR PROPULSION. The development of nuclear propulsion may introduce a revolution comparable to the change from sail to steam.

The use of nuclear power in surface ships will give vastly increased endurance; but no great saving in weight of machinery installations, and hence no significant advances in maximum speed or increased weight of armament, are foreseen, except possibly in very large ships.

Its use in submarines, however, will enable them to maintain high speeds (25 knots and upward) continuously submerged for periods running into months.

AIRCRAFT DEVELOPMENTS. The size, speed and range of aircraft have all greatly increased. A striking example of this is that the whole of the North Atlantic can now be covered by scouting aircraft operating from shore bases, thereby much reducing the problem of locating ships at sea. The development of flight refuelling has also increased the operational range and this is particularly important to carrier aircraft. The development of helicopters is of particular significance in A/S and amphibious warfare.

BALLISTIC MISSILES. Inter-continental ballistic missiles with ranges of 2,000 miles or more, and intermediate ballistic missiles with ranges of 500-2,000 miles, both capable of carrying nuclear warheads, are being developed and may in time replace the manned bomber for attacks on strategic targets. The threat posed by a submarine capable of launching such missiles is extremely serious.

GUIDED WEAPONS. Air-to-air, air-to-surface, surface-to-air and surface-to-surface guided weapons capable of carrying nuclear warheads are now being developed and may be expected to replace guns and bombs. The much greater range of these weapons will bring about a large extension of the tactical arena, with a corresponding need for equipment capable of detecting enemy forces at far greater distances.

ELECTRONIC WARFARE. Developments in radio equipments, particularly those able to detect, locate and jam radar transmissions, whether from ships, aircraft or guided weapons, have affected the extent to which electronics can be employed tactically. These developments may also have considerable influence on the types of future weapons.

BACTERIOLOGICAL AND CHEMICAL WARFARE. Bacteriological and chemical agents, the presence of which cannot be detected until they are present in lethal concentrations, may be used against both ships and shore targets. Effective defence against this form of attack involves many difficult problems.

41. Another post-war development of particular importance is the creation of the Soviet submarine fleet, which is believed to include over 500 submarines of various types. No other power has ever possessed in time of peace such a large number of powerful raiders with trained crews and the potential threat of this fleet, particularly against merchant shipping, exceeds anything previously known.

Courses of Action to achieve the fundamental aims of British Maritime Strategy in a Global War

42. Global war was defined earlier as unrestricted conflict between the Soviet Union and her allies on the one side and the U.S.A. and her allies on the other. It follows that in a Global War, British maritime strategy will be co-ordinated

with the overall Allied strategy as determined by the Allied High Command; this Allied strategy will take account of the fundamental aims of British maritime strategy.

The following paragraphs indicate the possible adjustments which may be made in the courses of action to achieve these aims as a result of the developments mentioned above.

43. Defence of the United Kingdom. The main immediate threat of attack on the United Kingdom is no longer invasion, but thermo-nuclear and nuclear aerial bombardment on a crippling scale. The only defensive measure at present practicable is counter-attack on enemy airfields and missile launching sites. Such counter-attacks would mainly be carried out by strategic air forces. These air forces must, however, operate from airfields, the positions of which are known to the enemy; they are therefore liable to be among the first targets he will attack. In this connection, carrier aircraft have an advantage in that the enemy will, on each occasion, have to locate the carriers from which they are operating before he can attack them. Moreover, carrier aircraft can deliver their attacks in relatively large numbers and from unexpected directions.

If the aerial bombardment of the United Kingdom were successful, it is probable that the enemy would follow it up by sending land forces to occupy the country.

44. The Defeat of Enemy Attacks on Merchant Shipping. As in the Second World War, the main threats to merchant ships at sea will come from submarines and aircraft, and, in coastal waters, from mines. The potential scale and intensity of attack are, however, much greater. Should a direct attack on the territory of the United Kingdom not take place or be inconclusive, the enemy could defeat Britain by preventing her from using merchant ships.

45. Attacks on enemy airfields and submarine bases are again likely to be employed in defence, and the use of nuclear weapons may result in these attacks being more effective than in the past.

46. Transit patrols by ships, aircraft and submarines are likely to be established, submarines being stationed in areas as close as practicable to enemy bases. The effectiveness of such patrols may be increased by the use of long-range detection equipment.

47. Area Searches may be used in areas where the enemy threats are not sufficiently serious to justify the institution of a convoy system (e.g., in remote oceans where surface raiders are operating singly). Area searches against submarines and aircraft are only likely to offer a reasonable prospect of success when adequate up-to-date intelligence is available.

48. In areas where the enemy threats to shipping at sea are serious, a convoy system will be introduced. The enemy's ability to track convoys continuously, and to attack in strength with nuclear and conventional weapons, may greatly increase the intensity of escort and close support operations.

49. In harbour, the most serious threat facing merchant ships is aircraft attack with nuclear weapons against both them and the port facilities on which they depend. It may, therefore, be necessary to disperse merchant ships to small harbours all around the United Kingdom for loading and discharging, in order to avoid presenting the enemy with a sufficient concentration of ships and port activities to form a worth-while target for nuclear attack.

If sufficient warning of impending hostilities is received, it is likely that all merchant ships would be ordered to leave British harbours in order to escape attack.

50. Prevention of the Use of Merchant Ships by the Enemy. The courses of action adopted to interrupt enemy shipping are likely to be similar to those used in the past. The use of nuclear weapons would increase the effectiveness of attacks at source.

51. Attacks on Enemy and Enemy-held Territory. The main form of attack is likely to be air bombardment on the lines mentioned in paragraph 43.

52. Amphibious raids may be employed against targets on or near the coast which are more suitable for this form of attack than any other. The protection of forces taking part in such raids will, however, require considerable effort, and this may well restrict the scope of raids to a small scale.

53. Amphibious invasion operations are unlikely to be undertaken until the enemy's main resistance has been broken. This is because such operations are vulnerable to nuclear air attack.

The Complementary Aims of British Maritime Strategy

54. So far, this chapter has been concerned with the fundamental aims of British maritime strategy—the aims which must be achieved in order to win the war.

There are also a number of complementary aims. In certain circumstances, the achievement of a complementary aim may be necessary for the achievement of a fundamental aim.

55. These complementary aims are:—

(*a*) Maintenance of the Offensive Spirit. Maintenance of morale is a principle of war which applies to the conduct of war at all levels. The purpose of including maintenance of the offensive spirit as an aim of maritime strategy is to emphasise that its importance must never be overlooked, even in the rarefied atmosphere of strategic planning. It can never be said too often that wars are fought and won by men, not by machines.

None of the fundamental aims of British maritime strategy could have been achieved in past wars unless the forces had been inspired with an offensive spirit—with the desire to take any and every opportunity to strike hard at the enemy and to keep on striking. The strategist must therefore bear in mind the need to preserve and foster this spirit, and, on occasion, to mount operations primarily for the purpose of stimulating it.

The absence of an offensive spirit will result in low morale and failure to exploit opportunities, and may induce the habit of thinking defensively. This can only lead to stalemate or eventual defeat.

(*b*) The Defence of Overseas Bases. The role of bases, both for offence and defence, has already been mentioned. The defence of overseas bases, and of the forces and ships using them, is therefore an important factor in maritime strategy. The principal threats to such bases are air attack, and land or sea-borne invasion.

(*c*) The Defence of Overseas Supply Areas. The reliance of the United Kingdom on supplies from overseas, and on the shipping to carry these supplies, was mentioned in connection with the protection of merchant shipping. Many supplies come from countries with whom the United Kingdom would probably be allied in a global war, and the defence of these countries would therefore form part of overall Allied strategy. Other supplies come from countries who may be expected to try to remain neutral. The retention of these areas for British and Allied use, and their denial to the enemy, is clearly of great importance. Tne

main threats to them are air attack, land or sea-borne invasion, and, in the case of neutrals, economic and psychological pressure.

(*d*) THE DEFENCE OF COUNTRIES TO WHICH THE UNITED KINGDOM IS BOUND BY TREATY OR ASSOCIATION. Most of these countries provide either bases or supplies, or both, and their defence will therefore be considered under (*b*) or (*c*). The defence of countries which provide neither will be important on political or psychological grounds only, and will seldom justify a major diversion of strength. An occasion when this was held to be justified was when the Germans invaded Greece in 1941. The principal threats against such countries are the same as for (*c*).

Courses of Action to achieve the Complementary Aims

56. The courses of action to achieve these complementary aims will naturally depend on the circumstances; for (*b*), (*c*) and (*d*), these circumstances will include the size and location of the territory to be defended, its distance from the enemy and the nature of the prevailing threat or threats. It is probable, however, that, so far as maritime forces are concerned, the courses of action adopted will correspond to those adopted for the defence of the United Kingdom and for the defeat of enemy attacks on merchant shipping.

British Maritime Strategy in a Limited War

57. Limited War was defined (chapter 1, paragraph 16) as any armed conflict short of global war; its scope may therefore range from the perennial squabbles of South American republics to large-scale undertakings such as the Korean conflict.

Generally speaking, limited war is likely to occur between two or more minor powers, or between a major power and a minor power. The United Kingdom may be directly involved as an interested party, or may be committed, by treaty or otherwise, to support one side against the other.

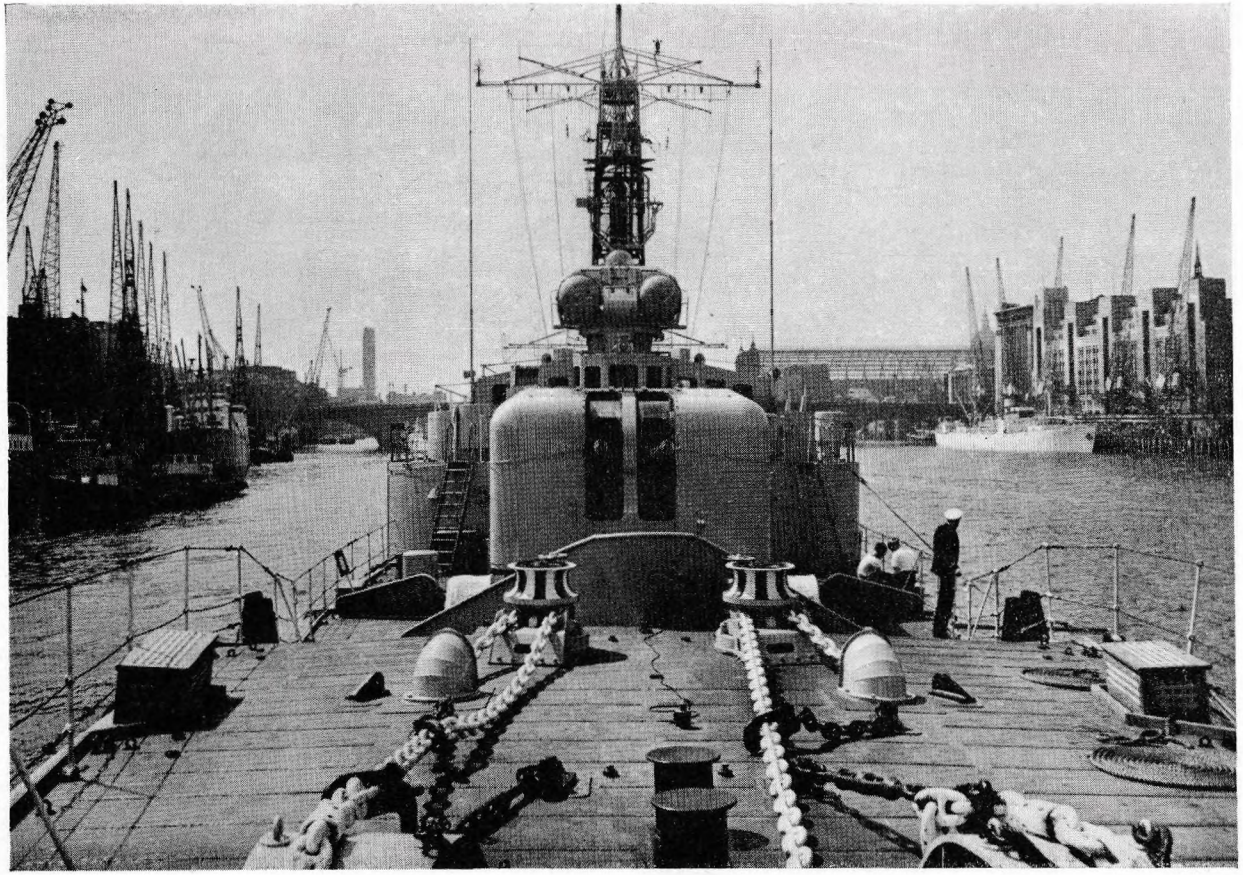
58. The aim of British strategy (or of that of her Allies) is likely to be to prevent the conflict spreading and to restore peace as soon as possible. The courses of action to achieve this aim will depend on the prevailing circumstances. In general terms, however, British maritime forces may be called upon to establish a blockade of the area to prevent outside interference, to destroy or neutralise any opposing maritime forces and to support operations by land and air forces, e.g., by covering an amphibious operation.

It may be necessary to take measures to protect British merchant ships against specific threats in the limited area of the conflict.

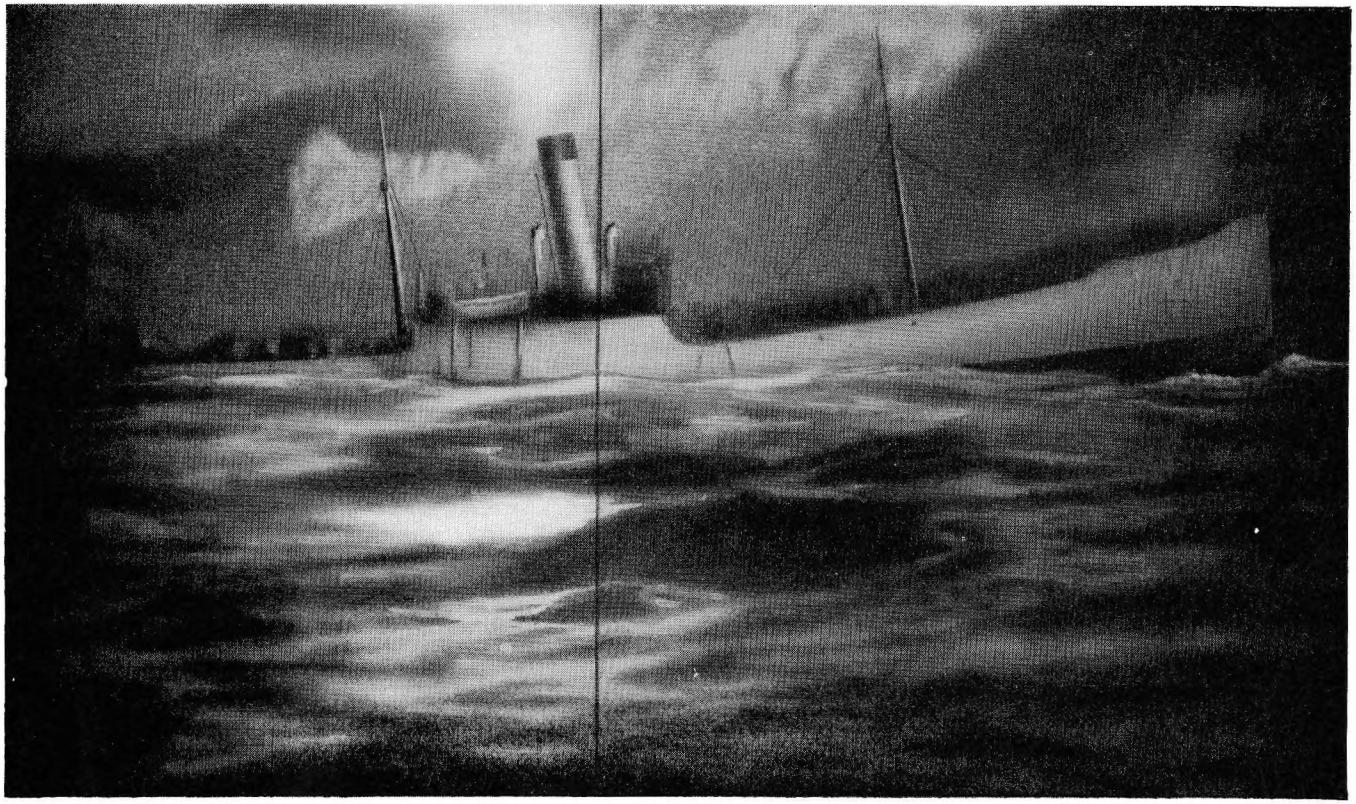
British Maritime Strategy in the Cold War

59. National strategy in the Cold War was discussed in Chapter 6. The aim of maritime strategy is simply to make the most effective use of the limited forces available to help in resisting the further spread of Communism.

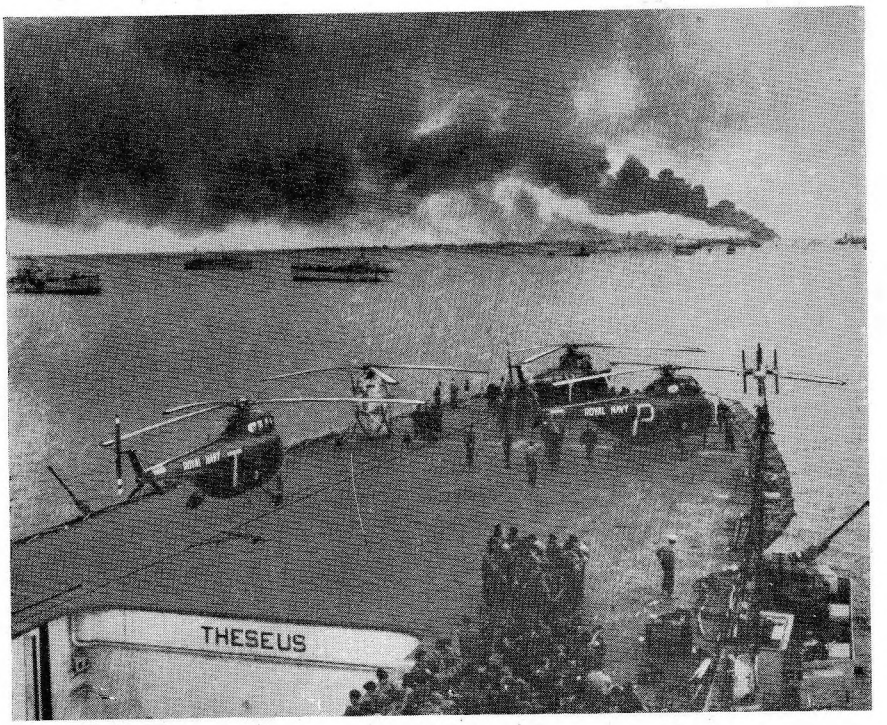
60. On account of its mobility, the Royal Navy provides an effective means of bringing forces rapidly to bear in peacetime emergencies. Such courses of action as flag-showing cruises, rendering assistance at natural disasters and displaying force in troubled areas have an important effect in what is essentially a psychological conflict. Active operations are likely to be confined to assisting the Civil Power in areas where disturbances have actually broken out.



10. H.M.S. *Salisbury* IN THE POOL OF LONDON



11. A SUCCESSFUL SUBMARINE ATTACK ON A GERMAN MILITARY SUPPLY SHIP



12. Suez operations—November 1956



13. Landing Royal Marines Commandos by helicopter at Port Said, November 1956

CHAPTER 12

Maritime Operations—General

1. The previous chapter stated the fundamental and complementary aims of British maritime strategy, and described, in broad terms, the courses of action which have been, and may in future be, adopted to achieve these aims.

The next six chapters will describe, in rather more detail, the maritime operations which have been, and may be, undertaken to implement these courses of action.

2. In describing maritime operations, it is possible to classify them in any one of the following ways:—

According to the forces employed, e.g., Carrier Force operations, convoy escort operations, submarine operations.

According to the nature of the target, e.g., Strikes on land targets, anti-submarine operations.

According to the aims of maritime strategy, e.g., operations to defend the United Kingdom against attack, operations to prevent the enemy from using merchant ships.

3. In the following chapters, maritime operations are classified according to the aims of maritime strategy. This classification follows naturally from the previous chapter and will help the reader, in his study of history, to understand that the true value of an operation is measured by its contribution to the aims of maritime strategy.

It will have been noted that the same course of action may be adopted to achieve several strategic aims; for example, attacks at source contributed to the defence of the United Kingdom, to the protection of merchant shipping and to preventing the enemy from using merchant ships. The operations which implement such a course of action may, however, differ widely. Thus, in the Second World War, an attack on invasion barges in Boulogne harbour was an entirely different undertaking from an attack on submarine pens at Brest.

Nevertheless, one operation may contribute to more than one of the fundamental aims of strategy, because:—

(*a*) it may destroy or damage a single enemy target which threatens the achievement of more than one aim (e.g., a major war vessel which could both support invasion forces and attack merchant shipping); or

(*b*) it may have secondary results which contribute to a strategical aim different from that to which the operation was primarily intended to contribute (e.g., an attack on submarine pens at Brest was primarily intended to contribute to the protection of merchant shipping; the attack may, however, have so damaged and disorganized the port as to prevent it being used by enemy merchant shipping).

So far as (*b*) is concerned, however, it is important to remember, both in planning and execution, that an operation should have only one aim. In some operations, there may also be certain *tasks*, the purpose of which is to ensure that the forces engaged are used to the best advantage if it is impracticable to achieve the aim or if further opportunities for action occur after it has been achieved. This is an illustration of applying the principle of *Flexibility*.

Types of Maritime Operations

4. Before describing particular operations, it is necessary to define certain terms which are commonly applied to different types of operations; these terms which relate broadly to the aims of the operations are:—

STRIKE. A strike is an operation whose aim is to attack a specific enemy target, the position of which is known or can be estimated.

ESCORT. The aim of an escort is to protect the ship or ships being escorted by intercepting and attacking any enemy who may approach.

CLOSE SUPPORT. The aim of a close support force is to intercept and attack any enemy which threatens the force being supported. The operations of a close support force are related to the movements of the particular force being supported, and are not necessarily directed at a particular enemy. (Example: An A/S group supporting a convoy escort.)

DISTANT SUPPORT. The aim of a distant support force is to intercept and attack any enemy which threatens the forces being supported. The operations of a distant support force are related to the known or estimated position of a particular enemy and are not necessarily co-ordinated with the movements of the forces being supported. Distant support is most frequently afforded by a form of blockade.

(Note: The term " Cover " is sometimes used instead of " Close Support " or " Distant Support " when heavy ships are operating to give protection against attack by enemy heavy units.)

SCOUTING. Scouting operations include searches, patrols, tracking and reconnaissance. They are usually an integral part of strike, escort or support, and do not in themselves implement a course of action to achieve a fundamental strategical aim.

" Offensive " and " Defensive " Operations

5. It has sometimes been the practice to describe operations as being either offensive or defensive. " Offensive " operations were said to be those in which forces sought out the enemy in order to attack him; " defensive " operations were those in which forces awaited the approach of the enemy before attacking him.

" Offensive " operations were held to be a superior form of maritime warfare, largely for the contribution they made to maintaining an offensive spirit and for their effect on the enemy's morale. However, this should rarely be the main consideration in planning operations. The acid test of an operation's success is what it has achieved, and at what cost, both in employment of forces and in losses.

Offensive (aggressive) *tactics* are essential both for defeating an enemy force and for maintaining an offensive spirit; but such tactics can be employed in " defensive " operations as well as in those classified as " offensive ". Indeed, an unsuccessful " offensive " operation is likely to have a worse effect on own forces' morale and contribute less to the fundamental aims of maritime strategy than a successful " defensive " operation.

In short, the location of an operation is generally less important than the manner in which forces are handled during it. It is clear, however, that the first and second fundamental aims of maritime strategy can, in the main, be achieved only by so-called " defensive " operations, while the third and fourth fundamental aims are achieved by so-called " offensive " operations. The words " offensive " and " defensive " should therefore be used with caution, because they can be misleading.

For example, operations to protect merchant ships may contribute to a " defensive " aim; but such operations, if properly conducted with aggressive tactics, will produce a vigorous " counter-offensive " with most harmful results to the enemy.

CHAPTER 13

Operations to defend the United Kingdom against Attack

Our first defence is close to the enemy's ports.
Nelson.

Attack at Source

1. In the past, the purpose of attacks at source was to destroy or immobilise the enemy's invasion fleet and its support forces when concentrated at their bases.

Attacks on defended bases by ships have always been hazardous, because ships were at a disadvantage when engaging shore artillery; it was necessary to hit the shore guns themselves, which were usually well protected, whereas the shore guns had only to damage the ships. For this reason, attacks at source by sailing ships were often carried out at night, using fire-ships, cutting-out parties and in suitable cases, landing parties to destroy port facilities. One of the most successful attacks on invasion forces at source was Rodney's attack on Havre in 1759.

By 1940, when the United Kingdom was threatened with a German invasion, attacks at source were carried out mainly by shore-based aircraft, which bombed invasion craft, port installations and troop concentrations.

Another form of attack at source by aircraft was minelaying inside port defences. This not only caused losses among enemy forces, but also immobilised all ships in port until the mines had been swept.

2. In a future war, the immediate threat of attack on the United Kingdom will come from thermo-nuclear and nuclear bombardment by aircraft or missiles, rather than from sea-borne invasion. Attacks at source, which are at present the only practicable defensive measure, will therefore have to be directed against such targets as enemy bomber airfields and missile launching sites. Such attacks could be carried out by aircraft operating from carriers stationed at a considerable distance from the enemy's coast. The advantages of carrier aircraft over land-based "strategic" air forces for these attacks have already been mentioned; they include:—

(*a*) the position of the carrier may be unknown to the enemy beforehand and he may therefore be unable to forestall the attack;

(*b*) the attack is delivered from an unexpected direction;

(*c*) larger numbers of aircraft can be used in the attack, and may swamp the enemy's defence system;

(*d*) low-level precision bombing can be carried out. This is particularly important if, for any reason, nuclear explosives are not used.

3. These attacks will require careful planning, which must take account of such factors as:—

(*a*) avoiding detection of the carrier by enemy reconnaissance;

(*b*) placing the carrier in such a position that the aircraft have to fly over as little enemy territory as possible before reaching the target;

(*c*) defence of the returning aircraft and of the carrier force against subsequent enemy attack.

4. Should a threat of sea-borne invasion arise, carrier-based aircraft may be used to attack the invasion forces in their bases, but it is likely that the majority of attacks would be carried out by shore-based aircraft. Midget submarines may well be used to carry nuclear weapons into enemy bases.

Attack on Enemy Invasion Forces whilst on Passage

5. The basic principles for operations against enemy invasion forces when on passage are:—

(*a*) early detection of the enemy's movements;

(*b*) deployment of own forces so that they can quickly concentrate when the routes likely to be taken by the enemy have been appreciated or when the enemy's actual movements have been detected.

6. Before the development of aircraft and wireless, detection measures took the form of deploying scouting ships, usually frigates, in the approaches to the enemy bases. When the enemy emerged, the scouts fell back on the main fleet which was stationed in an intercepting position either at sea or at a suitable base.

In the twentieth century, it became impracticable for ships to operate continuously near enemy bases, and the role of scouts was taken over by submarines who could report enemy movements by wireless.

During the Second World War, aircraft were able to reconnoitre enemy bases and give early warning of his movements and apparent intentions. British naval dispositions were on classical lines; the main units were stationed at Scapa Flow and Rosyth to intercept enemy supporting forces, and lighter units were based at ports along the East and South Coasts from which to attack the invasion forces themselves. However, so far as the invasion of the United Kingdom was concerned, the air situation had become the predominant factor. It was essential for the German air force to be able to protect their invasion forces from air attack and to support them during the land battle. The failure of the Germans to achieve the degree of air superiority necessary for this protection and support was the principal reason why the invasion forces did not sail.

7. Since the main threat to the United Kingdom in a future war is likely to be from air attack, the task of intercepting enemy forces on passage will be primarily a matter for the Royal Air Force. The possibility of sea-borne invasion or raids cannot, however, be wholly excluded, and it may be necessary for maritime forces, particularly submarines, to fulfil their traditional role.

8. Another form of attack which, in suitable conditions, offers good prospects of causing heavy damage to enemy invasion forces on passage is minelaying in the approaches to his bases. This can be carried out by fast surface minelayers, submarines and aircraft. Surface minelayers can carry a large number of mines and lay them accurately; they are, however, vulnerable to air attack. Submarines can only carry a small number of mines, but can lay them accurately and with a good chance of escaping detection. Aircraft cannot normally lay with a high degree of accuracy, but they are able to penetrate to areas beyond the reach of ships and submarines; moreover, they can " freshen up " existing minefields by laying more mines in the same areas.

The selection of forces to carry out such a minelay will therefore depend on the number of mines to be laid, the situation of the area to be mined, the degree of accuracy required in the lay, the positions of existing minefields and the probable degree of enemy opposition.

Minefields can also be laid at suitable points along likely invasion routes.

Attack on Enemy Supplies and Reinforcements

9. It is one thing to get an invasion force ashore; it is quite another matter to keep it supplied and reinforced in the face of opposition.

The most recent instance of a successful invasion of the United Kingdom provides a good illustration. In 1690, due to inadequate preparations and faulty dispositions by the British Fleet, the French were able to land a considerable force in Southern Ireland. They were, however, unable to maintain it, because the British Fleet subsequently took up positions from which it could intercept any attempts to get more ships through. The French land forces were later defeated at the Battle of the Boyne.

Similar considerations would have applied if the Germans had succeeded in landing invasion forces in 1940. At this time, however, the air situation would have been the dominant factor in operations so close to the land.

The Defence of Bases, Ports and Harbours

10. Whether or not enemy attack on the United Kingdom is accompanied by sea-borne invasion, the defence of bases, ports and harbours is of great importance in maritime warfare.

In the days before submarines and aircraft, bases could be adequately defended from sea-borne attack by shore artillery mounted in forts. Precautions (e.g., the laying of booms) had also to be taken against surprise attacks under cover of darkness.

The ability of submarines to enter harbours unseen made it necessary to add nets, indicator loops and controlled minefields to port defences. The development of the air threat during the First World War required the further addition of anti-aircraft artillery and fighters, which, at naval bases, were supplemented by anti-aircraft fire from warships in harbour.

11. There are likely to be four main threats to bases and ports in a future war—air attack, underwater attack, mining and clandestine attack by merchant ships carrying explosives.

12. Air Attack. The scale of air attack in a future war is likely to be so great that it is impracticable to consider the defence of individual bases and ports in isolation. In the face of such a threat, the most effective defence measures, apart from those already mentioned, are dispersal and efficient civil defence.

Dispersal will apply both to naval forces and to merchant shipping. Warships are likely to spend most of the time at sea and only return to bases for essential repairs and maintenance; the number of warships in a base at one time will be strictly limited. The provision of afloat support will accordingly be necessary; this is dealt with in Chapter 22.

Major commercial ports are likely to be priority targets for enemy air attack, due both to their vital role in the country's distribution system and to the concentration of merchant ships in their harbours. It will therefore be necessary for their activities to be dispersed among a large number of minor ports and for inland transport to be provided there. Merchant ships will be routed to these ports in small numbers for loading and unloading. In suitable weather and tide conditions, it may be practicable for some ships to be loaded and unloaded across beaches adjacent to inland transport facilities.

13. The Royal Navy is not directly concerned in civil defence, except for that of naval shore establishments. In the event of heavy damage to, or in the neighbourhood of, a naval base, however, Service personnel may be directed to assist in Civil Defence work in order to get the base working again as soon as

possible. Accordingly, all Naval personnel receive basic training in Civil Defence.

14. Underwater Attack. When naval forces and shipping could safely be concentrated into a comparatively small number of major ports and bases, their defence against underwater attack could best be provided by fixed defences (e.g., the elaborate system of causeways, obstructions and booms at Scapa Flow). Such concentrations are no longer acceptable in war, and it may not be practicable to provide fixed underwater defences at the many small harbours likely to be used as naval bases and commercial ports.

Ships using these harbours will need protection against attack by submarines, midget submarines and underwater swimmers. Local protection may be provided by mobile defences, including patrol craft, transportable radar equipment, light A/S booms and mobile Port Headquarters with the necessary communications. Such defences could be moved rapidly from place to place as the situation required.

Deep minefields may also be laid in port approaches.

15. Mining. A heavy enemy minelaying campaign in the approaches to bases and ports could cause severe losses and temporarily immobilise both warships and merchant ships. Measures to frustrate such a campaign will include:—

(*a*) attacks on enemy minelaying forces in their bases;

(*b*) patrols to detect and intercept enemy ships and submarines engaged in minelaying;

(*c*) active mine countermeasures, including minesweeping, minewatching, mine-hunting and mine-clearance;

(*d*) passive mine countermeasures, including high and low safe speeds, degaussing and wiping.

16. Clandestine Attack by Merchant Ships Carrying Explosives. A possible threat to commercial ports, and to naval bases where there is also commercial activity (e.g., Portsmouth), may come from nuclear weapons concealed in apparently harmless merchant ships. Such attacks are particularly to be expected immediately before, or soon after, the outbreak of war. In periods of international tension, therefore, all merchant ships entering ports may be searched by specially trained teams equipped with detecting devices. Any ships which appeared suspicious would be ordered to a remote anchorage for further inspection. Once the Government has assumed control of merchant shipping, danger is only likely to arise from a few neutral ships.

CHAPTER 14

Operations to defeat Enemy Attacks on Merchant Shipping

> " For the bread that you eat and the biscuits you nibble,
> The sweets that you suck and the joints that you carve,
> They are brought to you daily by all us Big Steamers—
> And if anyone hinders our coming, you'll starve."
>
> Rudyard Kipling: *Big Steamers*

1. The courses of action to protect merchant shipping are attacks at source, transit patrols, area searches, escort and close support operations, and control of merchant shipping. (The first four courses of action are listed in the order of their proximity to the source of the enemy threat).

This chapter discusses the threats to merchant shipping in the past, and the operations which were undertaken in pursuance of these courses of action. It then compares the different courses of action and considers briefly the possible operations in a future global war.

THE DAYS OF SAIL

The Threats

2. From the middle ages up to the end of the Napoleonic wars, the main threat to merchant ships came from small, fast warships and privateers, which carried only sufficient armament to overpower single, unescorted merchant ships.

Units of the battle fleet were sometimes used to attack concentrations of merchant ships, e.g., large unescorted convoys.

Attacks at Source

3. It was difficult for the protecting forces to intercept commerce raiders at sea, because the high speed of the latter enabled them to evade action with a superior force. The only places at which they could be cornered were their bases. Attacks on harbours used by raiders were carried out when the numbers based there justified a special operation. Such attacks achieved a varying degree of success, but the effect of even the most successful was not permanent unless the base itself was captured and occupied.

Area Searches

4. These were seldom conducted because, as noted above, the searching forces were usually unable to bring raiders to decisive action at sea.

Transit Patrols

5. Transit patrols, in the form of a close blockade of enemy bases, were operated to protect convoys against attack by an enemy's main fleet. Up to the middle of the 18th century, the endurance and sea-keeping qualities of ships-of-the-line were not sufficiently developed for such patrols to be maintained continuously, and they were accordingly established only during the passage of important convoys. During the Napoleonic wars, however, almost continuous blockade of the main French bases was maintained over periods of years, and provided

protection for a regular convoy system. In essence, these blockading forces provided a form of distant support.

Transit patrols were not effective against small warships and privateers, who were usually able to evade the patrolling forces.

Escort and Close Support Operations

6. Operations by the main fleet could not give effective protection to unescorted merchant ships against the depredations of commerce raiders, and it was therefore necessary for a system of close protection to be established. It was clearly impracticable for merchant ships to be escorted individually, and they were therefore formed into convoys, escorted by a small number of warships. The size of convoys varied from a dozen or so up to four or five hundred ships. The escort needed to be no bigger or more powerful than was necessary to deal with expected raiders and to ensure convoy discipline.

7. Protection of large convoys against attack by the enemy's ships-of-the-line was provided by the main fleet, which operated either as distant support by blockading the enemy fleet (paragraph 5) or, if the enemy fleet was already at sea, as close support. When operating as close support, the main fleet usually maintained a position from which it could intercept any attack on the convoy; it did not, as a rule, join the escort, because this would prejudice its tactical freedom.

8. Losses of ships in convoy were small because:—

(*a*) By concentrating merchant ships at sea at a small number of points, instead of allowing them to scatter over wide areas, the number of separate targets for enemy attack was greatly reduced and the enemy's difficulties in finding targets were greatly increased. A convoy was little easier to detect, in the broad oceans, than was a single ship.

(*b*) Raiders avoided action with warships.

(*c*) By concentrating the merchant ships in one position, it was practicable for the protecting forces to come between them and the enemy.

(*d*) When a convoy was attacked, each enemy ship could only attack one merchant ship at a time and the remainder had a good chance of escape.

Control of Merchant Shipping

9. Government control of merchant shipping in war dates from the 17th century, and a series of Acts from 1650 onwards often made it compulsory for most merchant ships proceeding overseas to sail in convoy in wartime. This Government control was reinforced by the action of Marine Underwriters who, because loss-rates among independently-sailed ships were much higher than among ships in convoy, charged higher insurance premiums for independents.

THE FIRST WORLD WAR (1914-1918)

The Threats

10. Initially, the main threats to merchant ships came from cruisers and armed merchantmen, which operated along the main trade routes, especially in focal areas. They caused some losses and dislocated shipping movements, but their operations were not on a sufficiently large scale to endanger the national economy; a Government War Risks Insurance scheme indemnified ship-owners and merchants against losses.

Attacks by submarines were instituted when their potentialities as commerce raiders became apparent to the enemy. To begin with, these attacks were made

in accordance with International Law; the submarine surfaced and gave the crew time to take to the boats before sinking the ship by time-bombs, gunfire or torpedo. In 1917, however, Germany resorted to " unrestricted " submarine warfare and merchant ships were sunk at sight, by gun or torpedo. These tactics led to extremely heavy losses of merchant ships.

In coastal waters, minelaying chiefly by submarines, along shipping routes and in port approaches, and attacks by destroyers, light surface vessels and aircraft supplemented gun and torpedo attacks by submarines.

Attacks at Source

11. The difficulties of attack by ships and submarines on enemy bases during the First World War have already been noted, and, for this reason, attacks at source were seldom carried out except by bomber aircraft. The most famous attack by ships was the Zeebrugge raid of April, 1918, which attempted to block the entrance to the submarine base; the strong opposition encountered by the raiding force imposed heavy casualties and prevented it from achieving complete success. The operation did, however, stimulate both Naval and National morale.

Transit Patrols

12. The impracticability of maintaining a close blockade of enemy bases, except to a limited degree by submarine patrols and by minelaying, led to the establishment of a distant blockade by patrols across suitable transit areas, such as the North Atlantic Straits. At first, these patrols were maintained by cruisers and armed merchant cruisers to intercept enemy raiders and merchant ships. Subsequently, when submarine attacks on merchant ships were intensified, the patrols were strengthened by the addition of A/S vessels and supplemented by the laying of extensive minefields. Despite the difficulties of maintaining an effective patrol in the weather and climatic conditions of Northern latitudes, the blockade across the Northern Straits achieved a fair degree of success against surface raiders. It had, however, very little effect on the operations of submarines. This was because the methods of detecting and attacking submerged submarines were crude, and the submarines in transit could concentrate on evading the patrolling forces. Much greater success was achieved across narrow stretches of water such as the Straits of Dover; here, deep minefields could be laid to prevent submarines transiting submerged, and patrolling forces could prevent any from getting through on the surface.

Area Searches

13. Area searches by cruisers, operating singly or in squadrons, were employed to hunt down enemy raiders in the broad oceans. Their effectiveness depended on intelligence of the enemy's movements from such sources as D/F fixes, raider reports by merchant ships and from neutral sources, and on careful appreciations of the enemy's probable intentions. The hunting down of each raider was, however, a long and difficult business, and some continued to operate successfully throughout the war.

Similar tactics were employed against submarines, but met with little success. A submarine was able to make its attack and then vanish, leaving the hunting forces to conduct a fruitless chase over an apparently empty sea.

The employment of " Q ships "—A/S vessels disguised as merchant ships—achieved some success, but their effectiveness ceased when submarines started unrestricted warfare.

Escort and Close Support Operations

14. Losses due to surface raiders were at no time so serious as to require the adoption of a convoy system to protect merchant ships. Losses from submarines, on the other hand, became increasingly serious and by April, 1917, had reached a crippling level. Despite the experience of previous wars, and the proved inability of transit patrols and area searches to cope with the problem, convoys were not introduced for coastal shipping until February, 1917, and for ocean shipping until May, 1917. This was mainly because the number of merchant ships to be convoyed had been seriously over-estimated at the Admiralty. In consequence, it was believed that convoy escorts would be very weak and that the ships would therefore be in greater danger than if sailed independently; it was also believed that convoys would increase shipping delays and cause serious congestion at the ports. In the event, convoys succeeded not only in drastically reducing shipping losses but also in enabling A/S forces to bring more submarines to decisive action; the reasons for this success were the same as those stated in paragraph 8 above. Moreover, experience showed that shipping delays and port congestion were less serious than had been expected, and could be largely overcome by good organisation.

It had also been believed that steam merchant ships would be unable to keep station and that it would therefore be impracticable to enforce convoy discipline. Experience showed, however, that this difficulty also had been over-estimated.

The addition of aircraft to a convoy escort greatly increased the safety of the convoy, because, although aircraft could not at that time attack submerged submarines effectively, they could force them to remain submerged and thereby limit their tactical movement.

Convoys were also effective against the threats to coastal shipping from submarines and ships, though, for various reasons, coastal convoys were not introduced extensively until 1918. They also reduced the losses of ships from mines, because the movements of convoys could be co-ordinated with the activities of the mine-sweepers.

Control of Merchant Shipping

15. Until the introduction of convoys in 1917, Government control of shipping was limited to advising ships which routes to follow and warning them of dangerous areas. A Government War Risk Insurance scheme was introduced on the outbreak of war. Although this enabled owners to continue to operate their ships, it removed the need for underwriters to maintain an actuarial check on the risks to shipping, and thus contributed to the failure to recognise, until 1917, the ineffectiveness of the defence measures—transit patrols and area searches—being taken.

Complete control of shipping was assumed on the introduction of convoys, although the convoy system was not universal and many ships were still sailed independently.

THE SECOND WORLD WAR (1939-1945)

The Threats

16. The same threats against merchant ships as existed during the First World War (paragraph 10) were renewed in a more severe form.

Surface raiders included heavy warships (" pocket battleships ") specially designed for commerce raiding and superior in strength to the cruisers normally used for anti-raider operations. Both these warships and armed merchant raiders frequently carried scouting aircraft, which greatly increased their tactical range.

The endurance and offensive power of submarines had also been developed. German submarines operated as far afield as the North American coast, the Caribbean and the Mozambique Channel. Their effectiveness in ocean raiding was greatly increased by " wolf-pack " tactics, in which a shore headquarters directed the formation of patrol lines to locate convoys, and when a convoy had been located, nominated submarines to track and attack it. The fitting of H/F D/F in escorts and the greatly extended use of A/S aircraft with convoys made wolf-pack tactics too costly, but the invention of the snort enabled submarines to revert to individual tactics in coastal waters despite the presence of aircraft patrols. V.L.R. (Very Long Range) German aircraft attacked independent merchant ships and stragglers, and fulfilled a limited scouting role for submarines.

17. The intensified threats in coastal waters included bombing and strafing attacks by aircraft, night torpedo and gun attacks by fast patrol boats (" E-boats ") and a heavy minelaying campaign in port approaches by aircraft. The use of magnetic, and, later, acoustic and pressure mines, increased the problems of the defence. Small short-range submarines were also active in coastal waters.

Attacks at Source

18. The development of bomber aircraft provided a means of attacking enemy raiding forces in their bases, and sustained offensives were carried out against heavy ships, U-boats and the airfields from which V.L.R. aircraft operated. Some of these attacks achieved conspicuous success (e.g., the sinking of the German battleship *Tirpitz* in Tromsö Fjord) and their overall effect was to impose on the Germans the need for a strong defensive effort, including, as in the latter part of the First World War, the provision of fighters and anti-aircraft artillery and the building of large concrete " pens " to house submarines. Post-war research has, however, revealed that the direct effect of these attacks, particularly those on submarine bases and building yards, was less than had been thought at the time.

19. Other forms of attack at source were seldom used, as the difficulties of overcoming the likely opposition made them certain to be costly. A case where the importance of the aim made this acceptable was the raid on St. Nazaire in 1942; the aim of this raid, which was successfully achieved, was to destroy a lock which might otherwise have been used to refit heavy warships for employment on commerce raiding in the Atlantic.

The development of midget submarines and of underwater swimming apparatus made it possible to carry out a few attacks on targets of special importance (e.g., the midget submarine attack which crippled the *Tirpitz* and enabled her to be sunk later by aircraft).

Transit Patrols

20. Patrols by ships and aircraft across transit areas such as the North Atlantic Straits were established on similar lines to those during the First World War. Their effectiveness against surface raiders was increased by the use of radar and by the much greater endurance of the patrolling aircraft; they did not, however, succeed in enforcing a complete blockade.

Anti-submarine patrols were operated in the North Atlantic Straits, and across the approaches to the Bay of Biscay, the Strait of Gibraltar and in other suitable areas. In addition to sinking a proportion of the submarines on passage, these

patrols limited the operational effectiveness of the remainder by forcing them to adopt evasive tactics.

British submarines maintained patrols in the approaches to enemy bases, and made successful torpedo attacks on several German warships and submarines.

Area Searches

21. Area searches for enemy surface raiders were carried out on the same lines as in the First World War. Whenever possible, the searching forces included ships carrying aircraft, and were reinforced by shore-based V.L.R. aircraft. By 1943, the development of V.L.R. aircraft, which were able both to search large areas and to shadow any suspicious vessels pending the arrival of surface forces, had virtually neutralised the threat from surface raiders in the Atlantic and Indian oceans.

22. Area searches were also conducted against submarines, principally by shore-based aircraft and by A/S Carrier Groups, consisting of an escort carrier and up to eight A/S vessels.

Shore-based aircraft were effective in forcing submarines to remain submerged and thereby denying them the tactical mobility on which wolf-pack tactics depended. The Carrier Groups depended on precise and recent intelligence of a submarine's position.

Post-war analysis of these operations has revealed that forces employed on area searches sank fewer submarines, proportionately to the effort involved, than did similar forces employed on escort and close support operations.

Escort and Close Support Operations

23. A convoy system was instituted on the outbreak of war. Initially, it was limited to the North-East Atlantic and U.K. coastal waters, both because there was an acute shortage of escort vessels and because the submarine threat was confined to the waters around the British Isles. As more escort vessels and maritime aircraft became available, the enemy submarines were forced to operate further and further afield. Eventually, the system was extended until it covered the whole of the North and Central Atlantic.

At first, convoy escorts consisted of destroyers, sloops, trawlers and shore-based aircraft of limited range. As the convoy system was extended, escorts with longer ranges were needed, and corvettes, frigates and V.L.R. aircraft came into service; refuelling of escorts at sea was also developed. Escort carriers and Merchantmen Aircraft Carriers (MAC-Ships) provided air support in areas beyond the reach of shore-based aircraft.

24. As intelligence of German submarine dispositions and understanding of their tactics improved, a high degree of concentration of A/S forces became practicable. This was effected by operating a proportion in areas of special danger; these forces were formed into A/S Support Groups, which sometimes included an escort carrier, and gave close support to successive convoys passing through their areas. When not so engaged, they were employed on area searches.

25. Protection of convoys threatened by surface attack was afforded by including heavy ships in the escort, or by operating them as close support in positions from which they could intercept an enemy. The former course was normally adopted when there was no indication of the direction from which attack was likely, as, for example, in an ocean convoy in an area where enemy raiders were known to be operating; the latter course was adopted when the likely direction of attack was

known, as, for example, on the Murmansk convoys by German ships operating from Norwegian harbours.

Distant support for all convoy operations in the Atlantic was afforded by the Home Fleet at Scapa. This support came into action whenever a German warship appeared in the Atlantic, e.g., the *Bismarck*.

26. Air attacks on coastal shipping caused heavy losses until an effective system of co-ordinating fighter protection with convoy movements was developed. This system, when in full operation, reduced losses to an insignificant level.

27. Protection against mines is essentially a technical battle, which can be fought in two ways—by developing methods of sweeping or destroying mines, and by adopting measures which prevent them from operating effectively.

The former include the use of magnetic sweeps to explode magnetic mines, of noise-makers to explode acoustic mines and of clearance divers to neutralise pressure mines. The latter include degaussing or wiping for protection against magnetic mines and the use of safe speeds in different depths of water to avoid setting up sufficient influence to actuate acoustic or pressure mines.

As in the First World War, convoy proved to be an effective method of protecting merchant ships against mines because the movements of convoys could be constantly controlled and co-ordinated with the operations of sweeping forces.

Control of Shipping

28. Complete Government control over the movements and employment of all merchant ships was imposed soon after the start of the war. This control was essential for the proper working of the convoy system, and for making the most efficient use of the ships to support the war effort.

COMPARISON OF THE DIFFERENT COURSES OF ACTION TO DEFEAT ENEMY ATTACKS ON MERCHANT SHIPPING

29. The foregoing sections have discussed the operations undertaken in the past to implement the various courses of action to defeat enemy attacks on merchant shipping, and have, where practicable, indicated broadly the degree of success which has attended them.

The following paragraphs summarise briefly the main advantages and disadvantages of each course of action.

Attack at Source

30. The main advantages of attacks at source were that the location of the enemy forces was known with certainty and plans of attack could be prepared in advance; destruction of enemy forces before they started operating reduced the defensive effort required at sea; and damage to port facilities hindered the operation of other enemy forces.

It was, however, difficult for attacks on well-defended bases to achieve complete success, and such attacks were often unduly costly in relation to the results obtained. Moreover, the effects of even the most successful attack were seldom more than temporary.

By themselves, therefore, attacks at source have never provided adequate protection for merchant shipping.

Transit Patrols

31. Transit patrols, in conjunction with minefields, across narrow, shallow stretches of water, both shores of which are in friendly hands, could be effective in stopping all enemy traffic and thereby impose on enemy forces the need for long diversions to reach their operating areas. These diversions reduced the period which the forces could spend in those areas.

Patrols across wide and deep stretches of water could not, for practical reasons, be completely effective in stopping enemy forces, but did make them take evasive action which, to some extent, limited their operational endurance.

Transit patrols could not therefore provide adequate protection for merchant shipping, except against an enemy whose only access to the oceans was by narrow and shallow channels.

Area Searches

32. Area searches imposed on enemy raiders the need for frequent evasive action, and, so far as surface raiders were concerned, limited the number of attacks which they could carry out in any one area in a given time.

The difficulty of locating the enemy in the oceans, even when recent intelligence of his whereabouts was available, made it necessary to employ comparatively large forces in relation to the enemy threat.

Escort and Close Support Operations

33. These operations were conducted only in conjunction with a convoy system and only in areas where serious enemy threats existed.

34. The advantages of this course of action for protecting merchant ships were:—

(*a*) The onus of making contact rested on the enemy. It was much harder for him to find, and close, a small number of convoys than it would have been for him to find targets among a large number of ships sailing independently. Thus, convoys had a good chance of evading enemy attack, whether or not they were escorted.

(*b*) An enemy who succeeded in making contact with a convoy was presented with a large number of targets simultaneously. Since he could only attack one ship at a time, the majority of ships in a convoy had a good chance of evasion, even if the convoy was attacked.

(*c*) It enabled the principle of Concentration to be observed in the deployment of the protecting forces.

(*d*) To achieve his aim, the enemy had to expose himself to attack.

(*e*) The movements of convoys at sea could be controlled, and they could be diverted away from known danger areas. Similar control of a large number of independent ships was not practicable.

(*f*) Morale of merchant ships' crews was enhanced by the presence of escorting warships and aircraft.

The size and frequency of convoys could be adjusted to conform to the protecting forces available and to the nature and severity of the enemy threats. A given escort force can provide better protection to a small number of large convoys than to a greater number of small convoys.

35. The disadvantages of a convoy system were mainly economic and may be summarised as follows:—

(*a*) It reduced the speed of all ships in a convoy to that of the slowest. (Note: Many fast ships continued to sail independently because their speed afforded protection against attack by submarines and surface raiders).

(*b*) After loading, ships had to await the assembly of the convoy and the availability of the escort.

(*c*) Delays in unloading sometimes occurred due to congestion at the terminal ports. These delays could, however, be avoided or minimised by good port organisation.

36. Convoys, and the associated escort and close support operations, have always in the past provided an adequate system of protection for merchant ships and have, at the same time, offered maritime forces more opportunities than any other course of action for attacking the enemy.

Historical research has shown that the economic disadvantages of convoys have generally been over-estimated and that, when convoys have been instituted in areas where losses among independent merchant ships have been heavy, the disadvantages have never outweighed the advantages.

A FUTURE GLOBAL WAR

The Threats

37. The threats to merchant shipping in harbour from nuclear bombardment, and at sea from the Soviet submarine fleet, have already been mentioned. This fleet, which is likely to include both nuclear-propelled and other submarines with high submerged speeds, may be capable of maintaining a continuous offensive against merchant ships in the North Atlantic and the seas around the British Isles, and at the same time conducting operations further afield. The offensive capacity of the submarines may be increased by the development of homing and pattern-running torpedoes, fitted with either nuclear or high-explosive warheads; by radar and search-receiver equipments; and by sonar which enables a submerged submarine to detect H.E. and sonar transmissions at greater ranges.

Submarine operations may be assisted by long-range scouting aircraft, which could locate targets over a wide area and direct submarines on to them. Scouting aircraft may also be used to detect large convoys for attack by enemy bombers, which will be able to carry bombs or guided weapons with nuclear explosive.

Surface raiders are not likely to be used on any scale, but may possibly be deployed in more remote areas to attack independent shipping and to extend the protecting forces.

38. In coastal waters, a heavy minelaying campaign, using all types of contact and influence mines, may be expected. Attacks by submarines are also likely, and a lesser threat may come from aircraft and light surface vessels.

Attacks at Source

39. Carrier-based aircraft, and possibly submarines armed with ballistic missiles, may be used to attack enemy submarine and air bases, particularly in the early stages of a global war. Although these attacks may cause great destruction if nuclear weapons are used, it would be unduly optimistic to assume that they could frustrate the submarine and air threats to shipping. Many submarines may be at sea on the outbreak of war and could continue to operate for some time before having to return to a base, particularly if depot ships have been deployed in suitable areas beforehand.

Transit Patrols

40. Submarines may be used to blockade enemy submarine bases and other ports. The effectiveness of these operations, and of more distant transit patrols by aircraft and A/S vessels, may be increased by improvements in detection equipment and associated weapon systems.

Area Searches

41. Modern aircraft employed on area searches should enable any enemy surface raiders to be more quickly and economically neutralised than in the past.

Against nuclear-propelled or snort-fitted submarines, however, area searches remote from merchant shipping impose few disadvantages on the enemy and offer relatively few opportunities for attack.

Escort and Close Support Operations

42. Developments since the end of the Second World War appear to have reduced the effectiveness of the protection afforded to merchant ships by convoys and the associated operations of escort and close support. Thus:—

(*a*) the greatly increased scope of air scouting, and the much larger number of submarines likely to be operating, will make it easier for the enemy to locate, and concentrate forces on, individual convoys;

(*b*) the increased underwater speed of submarines will enable them to make repeated and sustained attacks on each convoy;

(*c*) the threat of nuclear attack may require convoys to adopt extended formations which are uneconomical in A/S escorts;

(*d*) even if in extended anti-nuclear formation, a convoy would suffer severe damage if attacked with thermo-nuclear weapons.

43. These developments would require convoys to be heavily protected against submarine and air attack. In determining the size and frequency of convoys, a compromise would have to be reached between the two conflicting factors of the requirements of the United Kingdom's war economy and the availability of the maritime forces necessary to give a reasonable degree of protection against the prevailing threats.

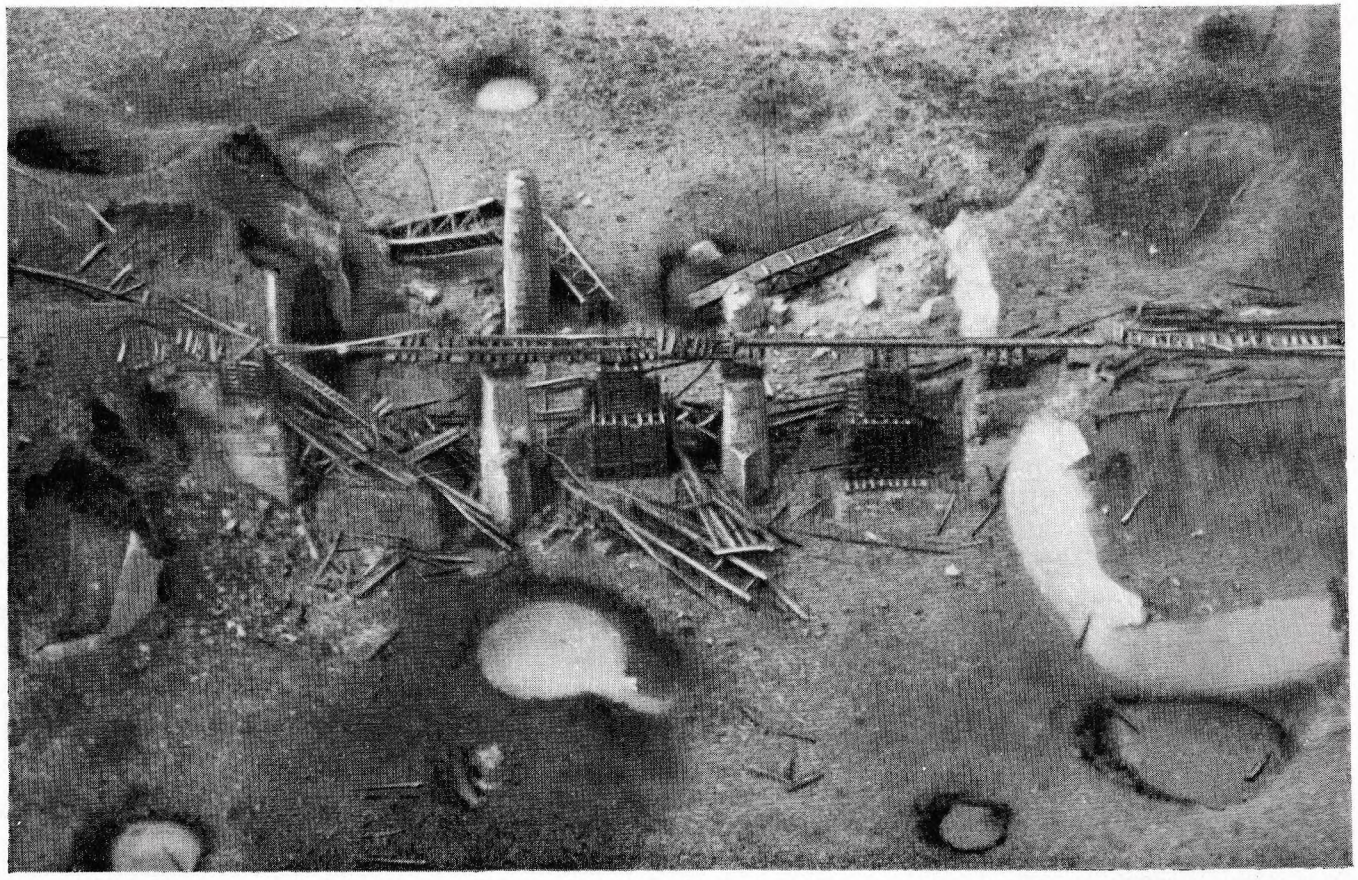
44. Although convoy appears to offer a lower degree of security than in the past, it is almost certain that losses would be still heavier if all merchant ships were sailed independently. It is unlikely that merchant ships will have any effective means of self-protection against air and submarine attack, and the increased speed of submarines will deprive the faster ships of the protection afforded by their speed in the past.

45. The limitations of attacks at source, transit patrols and area searches are such that there is every reason to suppose that they cannot provide adequate protection for merchant ships, whether sailed in convoys or independently.

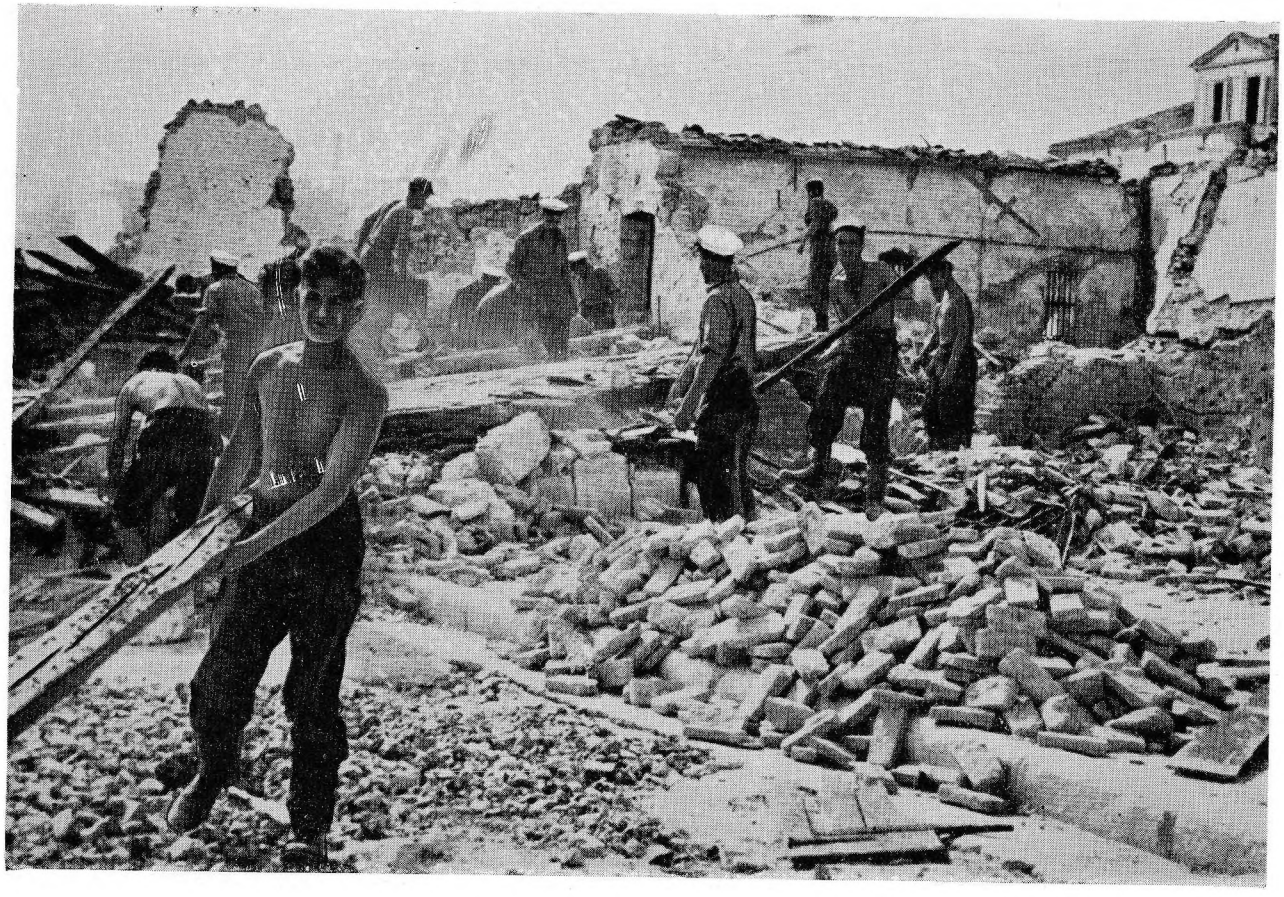
It is therefore probable that despite the reduced security offered by convoy, maritime forces would be more effectively employed on escort and close support operations than in other ways.

Control of Shipping

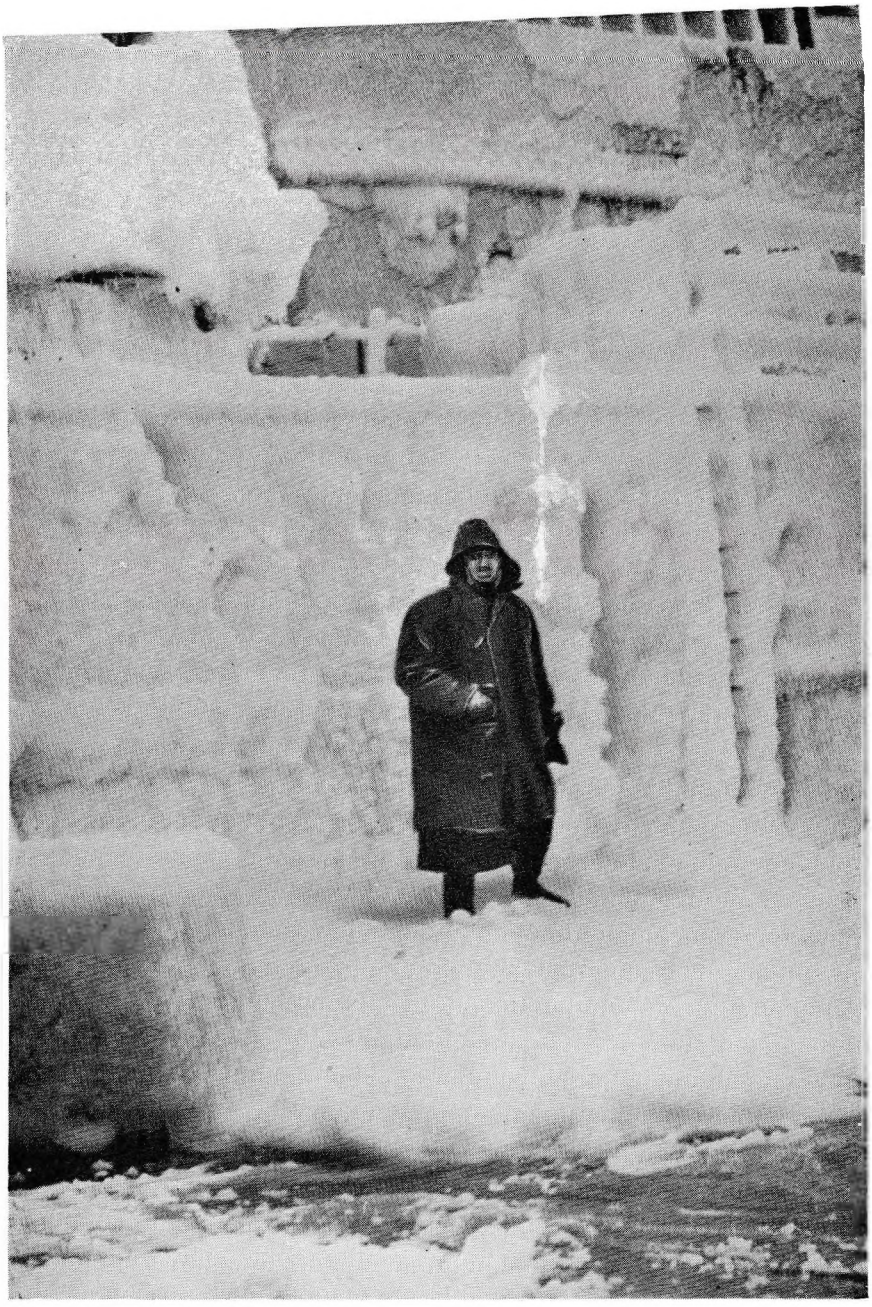
46. Control of shipping is a basic essential for escort and close support operations. It is therefore certain to be introduced at a very early stage and, if practicable, before hostilities commence.



14. Attack by Naval aircraft on a railway bridge in Korea



15. Naval ratings at the scene of the Greek earthquakes, August 1953



16. A CRUISER IN ARCTIC WATERS



17. A carrier in the Bay of Biscay

THE MERCHANT NAVY

Defensive Equipping of Merchant Ships

47. The right of merchant ships to carry arms for their own defence has long been established; by using her armament, however, a merchant ship accepts the risks which may result from the enemy using force in reply. The adoption by Germany during both World Wars of unrestricted warfare against merchant shipping nullified this consideration.

During the Second World War, most merchant ships were fitted with a small dual-purpose gun, with machine-guns for defence against low-flying aircraft and with light armour on the superstructure. Ships in convoy often carried smoke apparatus and barrage balloons. Larger merchant ships were fitted with degaussing equipment and small ships were " wiped " for protection against magnetic mines.

Although this armament could only give protection against a light scale of attack, it enabled ships to contribute to the defence of convoys and also enhanced the morale of the crews.

It is not practicable to arm merchant ships in peacetime, but the Admiralty arranges with Shipping Companies for new ships to be strengthened so that guns can easily be fitted in war. Arrangements are also made for stocks of guns and other defensive equipment to be maintained near commercial ports throughout the Commonwealth, so that fitting can be carried out quickly.

Naval personnel (D.E.M.S. Staffs) are earmarked in peacetime for duties in connection with embarking armaments in merchant ships and for manning them. Merchant service personnel are trained in the use of the armaments so that in war they can assist the naval personnel in manning them.

Relations with the Merchant Navy

48. This chapter would not be complete without a reference to the great importance of good relations between the Royal and Merchant Navies.

In peacetime, the Merchant Navy is fully engaged in its commercial activities, and few opportunities arise to exercise the operations which will be necessary for its protection in war.

It is therefore important that the problems connected with these operations are studied in theory, and that close touch is maintained with shipping interests. This task is carried out by the Trade Division of the Naval Staff, but it is the duty of all Naval officers to take every opportunity of learning the organisation and methods of the Merchant Navy and to establish good personal relations with Merchant Navy officers and seamen. Mutual understanding and goodwill can go far to contribute to the success of the operations which have been described in this chapter.

(SO 12330)

CHAPTER 15

Operations to prevent the Enemy from using Merchant Ships

> "To attack the commerce of the enemy is to cripple him, in the measure of success achieved, in the particular factor which is vital to the maintenance of war."
>
> Mahan

1. The courses of action to prevent an enemy from using his own merchant ships are:—

(*a*) attacks on ships in harbour and on the port facilities on which they depend;

(*b*) operations at sea, i.e., close blockade, distant blockade, and strikes.

2. It is equally important to prevent an enemy from using, or making use of, neutral merchant ships. This can be achieved by blockade, contraband control, and economic blockade.

3. In dealing with past operations against merchant ships, it is first necessary to state briefly the main points of International Law which concern them.

INTERNATIONAL LAW

Blockade

4. Blockade is an operation of war carried out by warships and aircraft to prevent all access to, or departure from, a defined part of the enemy's coast.

To be recognised as such under International Law, a blockade must satisfy the following conditions:—

(*a*) it must have been declared and notified to all concerned;

(*b*) it must be effective, i.e., maintained continuously by a force sufficient to make it dangerous for ships to try to run through it;

(*c*) it must be applied impartially to ships of all nations.

5. Blockading forces have the legal right to seize in prize any merchant ship, enemy or neutral, which attempts to run the blockade either inwards or outwards.

Visit and Search; Detention; Seizure

6. The maritime forces of a belligerent nation have the legal right to visit and search all merchant ships intercepted anywhere at sea, except in neutral territorial waters. If visit and search is not practicable, due to bad weather or other reasons, or if it is not practicable to carry out an adequate search at sea, an intercepted ship may be sent, under escort or armed guard, to a port for full examination. This is known as "Detention".

7. Enemy merchant ships intercepted at sea may at once be seized in prize and sent into port for condemnation by a Prize Court. Neutral merchant ships may only be seized if they are engaged in activities on behalf of the enemy or if the bulk of their cargo is "Contraband". "Contraband" consists of goods which have an enemy destination and are susceptible of belligerent use; under modern conditions of war, practically everything consigned to an enemy country, except possibly medical supplies, is likely to be treated as Contraband.

Other neutral merchant ships should be allowed to proceed after visit and search, or, if necessary, detention and full examination, have confirmed their neutral character. Small quantities of contraband revealed during search may be confiscated and any enemy personnel on board may be interned.

8. Any merchant ship which resists, or attempts to evade, visit and search or detention, may be fired on. She may only be sunk if she persists in resistance and there is no other way of preventing her from escaping. Any ship sailing in an escorted enemy convoy may be treated immediately both as an enemy ship and as having resisted visit and search.

A warship may open fire with light-calibre weapons on the boats and upper works of any ship which attempts to scuttle herself.

9. If, for any reason, it is necessary to sink a merchant ship which has been seized in prize, the persons on board must first be placed in a place of safety. The ship's boats are not a place of safety unless the weather is good and there is either land or another ship within a short distance. It is not permissible to sink a ship which has only been detained.

This provision applies to submarines and aircraft as well as to ships.

10. In the opening stages of the First World War, both sides observed the requirements of International Law for the safety of the crews of merchant ships which had been seized in prize. It is, however, difficult for submarines to comply with these requirements, and the Germans found that they could not prosecute an effective submarine campaign against merchant shipping within the rules of International Law. Consequently, they increasingly disregarded these rules and finally, in February, 1917, openly denounced them by declaring " unrestricted " submarine warfare on all merchant ships in waters around the British Isles. The Allies subsequently took similar action in reprisal.

In the Second World War, Germany carried out " unrestricted " attacks by submarines and aircraft on merchant ships from August, 1940. The United Kingdom subsequently announced her intention of disregarding the rules of International Law as a reprisal for the German attacks.

ATTACKS ON ENEMY MERCHANT SHIPS IN HARBOUR

11. The difficulties of mounting effective sea-borne attacks on defended harbours in the past have already been mentioned. Due to these difficulties, attacks on merchant ships in harbour were only carried out when the importance of the target was held to justify the risks involved. An example in the sailing-ship era was that on Cadiz in 1596, when a large number of ships, including some of the Spanish treasure fleet, were destroyed and extensive damage was done to the port facilities. Few such attacks were carried out by surface ships during the two World Wars; the best-known example is Force H's bombardment of Genoa harbour in 1940.

12. Attacks by submarines on shipping in defended harbours were also hazardous, but were sometimes carried out in the course of their patrols, e.g., H.M.S. *Torbay's* attack at Corfu in 1943.

Clandestine attacks by canoeists or underwater swimmers were occasionally mounted against special targets when other forms of attack were impracticable, e.g., the Royal Marines' attack in Bordeaux harbour in 1944.

13. The development of long-range bomber aircraft made it practicable for them to carry out air bombardments of commercial ports during the Second

World War. These bombardments were usually aimed at the port facilities and shipbuilding and repair yards, rather than at the ships.

14. It is probable that, in a future global war, attacks on merchant ships and commercial ports would be carried out mainly by aircraft; however, it is unlikely that in the early stages such attacks would take priority over those aimed at enemy forces threatening the United Kingdom or British merchant shipping.

The ability of carrier-based aircraft to deliver low-level precision attacks makes them very suitable for this type of operation, particularly if, for any reason, nuclear weapons are not being used.

OPERATIONS AGAINST ENEMY MERCHANT SHIPS AT SEA

15. Operations against enemy merchant ships may be carried out by forces maintaining close or distant blockade, or by strike forces.

Close Blockade

16. The close blockades maintained by surface ships during the sailing-ship era, particularly during the Napoleonic Wars, sometimes succeeded in virtually paralysing merchant ship movements. This was particularly important at a time when land transport was slow and difficult. Thus, Nelson's blockade of Cadiz in 1805 deprived the French and Spanish fleets of sea-borne supplies, and the critical shortages caused thereby were an important factor in Villeneuve's decision to leave harbour.

17. Surface forces were unable to carry out close blockade after the development of torpedo boats; they were accordingly replaced in this role by submarines and mines.

18. Submarines could not maintain a continuous close blockade, because they had to take evasive action when approached by enemy warships. Nevertheless, by carrying out intermittent attacks on merchant ships in the approaches to ports and along coastal shipping routes, and by frequently changing their operational areas, they interrupted shipping movements and compelled the enemy to employ forces on protecting the merchant ships.

19. During both World Wars, minelaying in the approaches to ports and along coastal shipping routes caused substantial losses and interruption of shipping movements. The enemy was obliged to mount a considerable minesweeping effort in order to keep his ships moving.

The effects of minelaying operations were increased if they were co-ordinated with air strikes against enemy minesweeping forces, and if existing minefields were repeatedly " freshened-up " with further mines laid by aircraft.

Distant Blockade

20. A distant blockade was only effective if it was maintained across a sea area through which all ships had to pass in order to reach the enemy's territory. The effectiveness of such a blockade depended either on up-to-date intelligence of likely shipping movements, and good ship-recognition; or on maintaining sufficient patrol forces to cover adequately the whole area.

During the First World War, the Allies maintained a distant blockade of Germany by cruiser patrols across the North Atlantic Straits; this was effective in preventing supplies reaching the enemy from outside Europe.

A similar blockade was established during the first two years of the Second World War. When, in June 1940, Germany had occupied the whole of the

French Atlantic sea-board, a distant blockade was instituted across the entrance to the Bay of Biscay. In view of the large area to be patrolled and the small forces available, this blockade depended primarily on intelligence of forthcoming movements by enemy merchant ships. The blockading forces consisted primarily of aircraft and submarines; ships operated in conjunction with aircraft when an opportunity of seizing a merchant ship arose.

In the Pacific, the U.S. Navy maintained a submarine and air blockade of Japan and Japanese-occupied islands from 1942 to 1945. This blockade inflicted crippling losses on the Japanese merchant navy; it was made easier by the failure of the Japanese to appreciate the importance of merchant ships and to take effective measures for their protection.

Strikes against Enemy Merchant Ships

21. When it is not practicable to enforce a complete blockade of enemy merchant shipping, losses can be inflicted and interruption caused to shipping movements by strikes against individual ships or convoys. Strikes against coastal shipping form a useful supplement to a distant blockade. Moreover, strikes compel an enemy to provide protecting forces additional to those needed to meet the mine and submarine threats.

Strikes are likely to achieve good results only if they are based on accurate intelligence of shipping movements. This may be obtained by air or submarine reconnaissance, by study of convoy cycles or by reports from special agents.

Strikes against merchant ships not sailing in convoy will probably not be carried out unless prior notice has been given that the requirements of International Law are being disregarded.

22. During the First World War, strikes against German coastal shipping were carried out by surface forces operating from East Coast ports, e.g., the Harwich cruiser force.

Such operations were often impracticable in the Second World War, due to the enemy air threat. Day strikes were therefore carried out by Coastal Command aircraft. At night, strikes were carried out by coastal forces craft supported by destroyers.

During the Axis campaign in North Africa from 1940 to 1943, ships, submarines and aircraft based on Malta carried out strikes against supply ships sailing between Italy and enemy bases in North Africa. The heavy losses inflicted were a major factor in the enemy's defeat.

In the Pacific, the U.S. Navy's submarine blockade of Japan was supplemented by air strikes.

Operations at Sea against Merchant Ships in a future global war

23. It is doubtful whether it would be practicable or worthwhile to institute any form of distant blockade of the Soviet Union. Operations against Soviet merchant ships at sea are therefore likely to be confined to close blockade of major ports by submarines and minelaying, and strikes against coastal shipping.

NEUTRAL MERCHANT SHIPS

Blockade

24. If an effective blockade of an enemy's territory is being maintained, all neutral merchant ships can, under International Law, be prevented from entering or leaving enemy ports. Any which try to do so can be seized (paragraph 5).

25. In practice, this method of interrupting neutral shipping could only be effective where a close blockade was being maintained by surface ships. As

already explained, such a blockade was not practicable in the two World Wars and is unlikely to be so in a global war.

26. It should be noted that if a *distant* blockade is maintained across waters through which ships have to pass in order to reach neutral countries, it is not recognised by International Law as a blockade (paragraphs 4 and 5) and the only rights possessed by the patrolling forces are those of visit and search, and detention (paragraphs 6-8) in order to exercise "Contraband Control" (paragraph 27).

Thus, for example, the forces patrolling the North Atlantic Straits during the First World War were not entitled to seize neutral merchant ships (unless they were engaged in activities on behalf of the enemy), since they had to pass through the Straits in order to reach Scandinavian ports.

Contraband Control

27. The right of a belligerent to visit and search all merchant ships, and if necessary to detain them for full examination, enables goods destined for an enemy country to be intercepted on the high seas. This is known as Contraband Control.

For Contraband Control to be effective, it is necessary to maintain patrols across sea areas through which ships which may be bound for enemy ports must pass; and to establish Contraband Control bases to which ships can be sent, under guard or escort, for examination.

28. During both World Wars, Contraband Control duties were carried out by the patrols across the North Atlantic Straits (paragraph 20).

29. The "Navicert" system was introduced to enable neutrals to avoid the delays caused by visit and search or detention. Under this system, neutral ships which were prepared to comply with British rules against the carriage of contraband, were granted clearance certificates, known as "Navicerts," by the appropriate British authority at the port of departure. These Navicerts ensured that a neutral ship intercepted by a British warship would be granted quick clearance.

"Ship Warrants" were also issued to neutral ships to enable them to make use of British facilities for insurance, banking, repairs, bunkering etc. The threat of withdrawal of a ship warrant, and the consequent denial of these facilities, was an effective method of persuading neutrals to comply with British orders against the carriage of contraband.

30. Economic Blockade. In war, a special Government Department is set up to assume responsibility for all aspects of economic warfare, including economic blockade. Economic blockade embraces all action designed to prevent neutral countries from supplying the enemy; such action includes diplomatic and financial pressure, the denial of shipping facilities under British control and threats of economic retaliation (sanctions).

31. Neutral Ships in a future Global War. As a result of alliances concluded between the major ship-owning nations, there are unlikely to be many neutral ships in a future global war. Such neutrals as there are would be subjected to contraband control and economic blockade to the fullest extent practicable. It must be realised, however, that such action is unlikely to prove very effective against a large continental country, such as the Soviet Union, which is virtually self-sufficient for essential supplies.

CHAPTER 16

Attacks on Enemy and Enemy-held Territory

> " The power of our establishments should be so contrived as to admit of a rapid extension at the outset of a war, so as to place us at once in security at home whilst we are enabled to reach the full fruits of our maritime superiority in striking an early blow against the territory of the enemy."
>
> Castlereagh (1815)

1. Attacks by maritime forces on enemy and enemy-held territory fall under two headings—air or surface bombardment, and amphibious operations.

AIR OR SURFACE BOMBARDMENT

2. Surface bombardment of targets in enemy territory has usually been limited to attacks on bases or to support for amphibious operations. This was because " strategic " targets were generally beyond the limited range of warships' guns. Surface bombardments were, however, sometimes carried out by ships and submarines to harass the enemy and to enhance own forces' morale or to entice enemy forces into action; examples of successful attacks with these aims are Lord Cochrane's operations against the French army's lines of communication in Spain during the Peninsular War; the German bombardments of British East Coast towns in 1915; and the bombardment of Cherbourg by H.M.S. *Revenge* in 1940.

3. Attacks by carrier-based aircraft were, until the latter stages of the Second World War, similarly limited because they did not possess the range to reach " strategic " targets. As their range and weapon-carrying capacity developed, carrier aircraft were increasingly used to attack inland targets in enemy territory, and they played an important part in the final stages of the war against Japan.

4. It has already been stated that in a future global war, carrier aircraft may contribute to the defence of the United Kingdom by attacking enemy airfields and missile launching sites. They may also be employed, probably in the later stages of the war, in attacking a wider range of " strategic " targets.

It seems unlikely that surface bombardments would be carried out by ships, except in conjunction with amphibious operations. Submarines may, however, attack small targets by gun fire, or may be able to launch guided weapons or ballistic missiles against large targets.

AMPHIBIOUS OPERATIONS

5. British land forces must cross the sea in order to come to grips with an enemy; amphibious operations are therefore a necessary prelude to land operations against an enemy, except when such operations can be launched from overseas territory which is already in British or Allied hands.

6. An Amphibious Operation is defined as a combined operation by sea and land forces with associated air support. Such operations are of two types:—

RAIDS. An amphibious raid is a landing on enemy-held coast by armed uniformed units, organised to fight, ***with the intention of re-embarking when their task is completed.*** The scope of a raid may vary from a landing by a few men to obtain

intelligence or to destroy a small target, to a large expedition to destroy the facilities at a major port, e.g., the Zeebrugge Raid (1918), the St. Nazaire Raid (1942). Such large expeditions are a form of attack at source.

INVASIONS. An invasion is a landing on enemy-held coast by armed uniformed units with the intention of occupying the area of the landing and extending this occupation by defeating the enemy's forces. Invasions may vary in scope from the occupation of a small strategically placed islet to a full-scale assault on enemy-held territory.

7. The following factors are essential to the success of both types of operation:—

SURPRISE. For small raids, complete surprise may be essential to success. It is, however, difficult to achieve for larger operations, because the preparations cannot be wholly concealed from the enemy. Nevertheless, much can be done to achieve tactical surprise by maintaining strict secrecy as to the exact time, date and location of the assault. Other methods of achieving tactical surprise include the use of feints or diversions, the dissemination of false intelligence and the organisation of air reconnaissance over places unconnected with the operation.

TRAINING. Amphibious forces should be allowed a period for special training before the operation, and should be fully briefed on the nature of the terrain.

CO-OPERATION. Full co-operation between all forces taking part is vital, and should be developed during the training period.

AIR AND SURFACE ESCORT. The provision of an adequate surface and air escort during the passage to the assault area, and the attainment of local air superiority during the operation are essential, except in the case of small raids launched from submarines. In all raids, provision must be made for covering the withdrawal.

Responsibilities of Maritime Forces during invasions

8. The aim of the maritime forces is to protect the invasion forces from attack by enemy maritime forces throughout the operation and to support the land battle.

The following paragraphs describe briefly the different phases of an invasion and the responsibilities of maritime forces during each phase.

9. THE PREPARATORY STAGE. Action by maritime forces during this stage is directed to eliminating enemy maritime forces which threaten to oppose the landing. Suitable diversionary operations may also be undertaken to mislead the enemy and preserve tactical surprise.

10. PLANNING. This starts well before and continues throughout the preparatory stage. It is conducted on a joint-service basis at all levels. Plans should be based on sound intelligence and accurate geographical and hydrographical data; clandestine operations may be required to obtain these.

The Navy is responsible for the provision and manning of assault ships and craft, and, in co-operation with the Ministry of Transport, for the planning of embarkation and disembarkation arrangements, and of convoy assemblies and schedules.

11. TRAINING. The importance of special training has already been mentioned. Planning should take account of this, and when it is sufficiently advanced, rehearsals should be held under realistic conditions. Allowance should also be made for the crews of assault ships and craft, and aircrews, to work-up for their particular roles.

12. ASSEMBLY. The choice of assembly areas for the assault forces will depend on port loading facilities, the distance from the assault area and the need for dispersal to minimise the risk of observation and attack by the enemy. The likely scale of enemy opposition during the sea passage must also be taken into account. Maritime forces are responsible for protecting ships and craft from sea-borne attack during their movements to and concentration at the assembly points.

13. THE SEA PASSAGE. Maritime forces are responsible for the safety of the expedition throughout the sea passage, which ends at the lowering position for the assault craft. The scale of escort will be determined by the size of the expedition, the scale and type of enemy opposition expected and the degree of tactical surprise likely to be achieved. The provision of minesweepers to clear channels for the assault convoys is essential.

14. THE ASSAULT. The immediate aim of the assault is to secure a number of " beachheads " which can be linked into a " bridgehead "; a carefully timed and phased programme of landings is essential. The Navy is responsible for landing the assault forces at the right place, at the right time and in the right order. This is a complex problem which calls for additional navigational aids and specially-equipped landing craft. The control of the assault operation is exercised from headquarters ships fitted with extra Action Information and communication facilities.

Naval forces may be required to provide gunfire and air support for the land forces, and also air defence for the bridgehead if it is beyond the range of shore-based fighters.

Mine countermeasures forces will be required to precede the assault craft to deal with any mines and underwater obstacles.

The assault from the sea may be accompanied by airborne landings at key points inland or on the flanks of the assault area. In the Second World War, such landings were made by parachute troops and by gliders; the latter proved to be too vulnerable, and they are now being replaced by helicopters. Troop-carrying helicopters may operate from a specially-equipped aircraft-carrier (a " Commando Carrier "). In landing troops by helicopter, it is important to achieve a rapid build-up at the landing point in order to exploit tactical surprise to the full and to prevent the first wave of troops from being over-run by small enemy forces. The rate of build-up depends on the number of helicopters available, the number of men which each can carry, the time taken to load and unload and the time of flight from the carrier to the landing point. The time of flight can be reduced by stationing the carrier as close inshore as practicable. The distance inland of the landing point will depend, *inter alia*, on the rate of build-up considered necessary in the light of likely enemy opposition.

15. THE FOLLOW-UP. The landing of reinforcements immediately after the assault is known as the follow-up. Naval responsibilities for the correct and timely landing of these reinforcements are the same as for the assault troops.

16. THE BUILD-UP. As soon as the bridgehead has been secured by the assault and follow-up, the task of building-up the forces ashore begins. This requires a continuous flow of shipping bringing troops, transport, ammunition, fuel and stores of all kinds. Maritime forces are responsible for the safe arrival of this shipping and for its protection whilst in the assault area.

When carrier aircraft are responsible for the air defence of the assault area and for air support of the land forces, they must continue to operate until airfields have been established on shore.

It is likely that in future much greater use will be made of transport aircraft for bringing in troops and supplies for the build-up. The use of helicopters for carrying troops and small quantities of stores from the bridgehead to forward positions is also probable.

17. Beach or Port Organisation and Maintenance. Prior to the Second World War, the early capture of a port and development of its facilities, were regarded as essential for the build-up and maintenance of the invasion forces. Experience during the Normandy landings in 1944 showed, however, that in favourable weather conditions, a high-rate of build-up can be attained by the use of a good beach organisation. This development may be of particular importance in view of the vulnerability of port facilities and concentrations of ships to air attack.

The particular tasks of maritime forces include regulating the movements of ships and crafts, clearing mines and under-water obstacles and removing stranded or wrecked ships. They are also responsible for the defence of the bridgehead or port against sea-borne and underwater attack.

Amphibious Invasion Operations in a future Global War

18. The vulnerability of large concentrations of forces to bombardment by aircraft or ballistic missiles particularly if carrying nuclear explosives, makes it appear unlikely that invasion operations on the scale of the Normandy landings would be carried out in a future global war as long as the enemy retains the ability to use these forms of defence. Current planning therefore assumes that amphibious invasion would not be undertaken in the first or second phases of a global war. It is possible, however, that such an invasion might be mounted during the third phase, in conjunction with an advance overland.

Responsibilities of Maritime Forces during Amphibious Raids

19. The phases of an amphibious raid, and the responsibilities of maritime forces during each phase, correspond to those for an invasion, except that the phase after The Follow-up is The Withdrawal.

The scale of air and surface escort will depend on the size of the raiding force. For small raids, escorts should be kept to a minimum in order to improve the chances of achieving surprise.

20. " Blocking operations " are raids with the aim of denying the enemy the full use of a port. This may be achieved by sinking specially-prepared blockships in narrow channels or by damaging installations vital to the working of the port e.g., lock gates, dock caissons.

Blocking operations are hazardous undertakings because they involve a frontal assault on a position which is likely to be held in strength. The raiding forces should include strong landing parties to contain the defences while the blocking is carried out.

21. Amphibious raids have been carried out in all past wars and it is probable that they would feature in a future global war.

Blocking operations are so costly, however, that they are unlikely to be carried out if other means of achieving the aim, e.g., air bombardment or minelaying, are available.

CHAPTER 17

Operations associated with the Complementary Aims of Maritime Strategy

1. Chapters 13 to 16 have discussed the maritime operations which have been, and may be, undertaken to implement the various courses of action for achieving the four fundamental aims of British maritime strategy.

It is now necessary to consider briefly operations associated with the achievement of the complementary aims of maritime strategy (Chapter 11, paras. 54 to 56).

Operations to maintain the Offensive Spirit

2. Generally speaking, all operations which are directly related to the achievement of a specific strategic aim should be planned and conducted in such a way as to foster and develop an offensive spirit among the forces taking part.

3. There may be times when it is not practicable, due to insufficient forces or other reasons, to mount operations which are directly related to the achievement of a specific strategic aim. This may well occur in theatres of war which are remote from the main scene of activity.

At these times, it is particularly important that the forces available should be so employed that they can feel they are contributing something, however small, to the progress of the war. This can best be done by carrying out small-scale operations, the aim of which is to keep alive the desire to strike at the enemy.

4. Operations which are suitable for this purpose include strikes against minor, poorly-defended targets; clandestine operations against ships in harbour; and amphibious raids.

The scale and nature of the operations will naturally depend on the forces available, on the targets within their range and the likely degree of opposition. As a general rule, the scope of each operation should be so limited that it is well within the capacity of the forces taking part. This is because an operation which is not obviously successful, or which, even though successful, involves severe casualties, may have an effect on morale opposite from that intended.

Operations to defend Overseas Bases

5. Some overseas bases are situated in islands (e.g., Malta). These may be threatened by air attack; if this succeeds in overcoming the defences, it may well be followed by invasion.

Maritime forces may therefore be required to attack the airfields from which enemy aircraft operate, and possibly to supplement the shore-based aircraft in defending the base.

Should an invasion be threatened, maritime forces would be required to carry out operations on similar lines to those described in Chapter 13, i.e., attacks at source, attacks whilst on passage, and, if the invasion forces get ashore, attacks on the ships carrying supplies and reinforcements.

If the enemy should be able to establish a blockade of the base with superior forces, it may be necessary to run through heavily-protected " survival " convoys with essential supplies. The use of aircraft and submarines to carry small quantities of vital supplies may be practicable.

6. Similar operations may be required to defend bases which are situated in land masses, e.g., Gibraltar, Singapore. In addition, maritime forces may be called upon to assist in defending a base against overland invasion by launching amphibious operations in the rear of the enemy's advance or by direct tactical support of the army by air or surface bombardment.

Operations to defend Overseas Supply Areas

7. Maritime forces will be principally concerned with protecting merchant ships plying to and from the various overseas supply areas; this has been considered in Chapter 14.

Should these areas be directly threatened with enemy attack, maritime forces may be called upon to carry out operations similar to those required for the defence of the United Kingdom (Chapter 13). It may also be necessary to protect ships carrying land forces to the area, and possibly to mount amphibious operations.

Operations to defend Countries to which the United Kingdom is bound by Treaty or Association

8. Should it be decided to assist in the defence of countries which provide neither bases nor important supplies, the operations required are likely to be on the same lines as those mentioned in paragraph 7.

CHAPTER 18

Limited and Cold War

Maritime Operations in a Limited War

1. The restricted area of hostilities in a limited war imposes a corresponding limit on the scope of maritime operations; within this area, the nature of the hostilities, and the size of the forces taking part, may vary considerably. It is therefore impracticable to state accurately the maritime operations which may be required; they may, however, be considered in general terms under the headings of operations at sea and operations in support of the land battle.

2. Operations at Sea. It is unlikely that major maritime forces would be engaged on both sides, and it may therefore be assumed that the preponderance of strength would rest with the United Kingdom or her Allies.

The aim of the British (or Allied) maritime forces in operations at sea would be to prevent any interference by enemy maritime forces with the progress of operations on land. This may involve providing protection for troopships and merchant ships against air and submarine attack, and the institution of mine countermeasures. It may also be necessary to carry out strikes against any enemy warships which may be detected whether they are at sea or in their bases. Clandestine operations (e.g., minelaying at night) by enemy small craft may be expected in inshore waters.

3. It is probable that, provided any air threat could be contained, a close blockade of enemy territory would be instituted in order to intercept seaborne supplies or reinforcements. Such a blockade would be conducted in accordance with the requirements of International Law; it should, however, be noted that a blockade can only exist legally when war has been formally declared.

4. Ships are likely to be subjected to clandestine attack when in harbour and special precautions against this should always be taken in the area of hostilities.

5. Operations in Support of the Land Battle. Experience since the end of the Second World War has shown the need to bring force to bear with the minimum of delay in order to prevent the conflict from getting out of hand.

Maritime forces may therefore be required to launch amphibious operations immediately on the outbreak of hostilities, and to provide support by air and surface bombardment during the assault. Further amphibious operations may also be mounted if the line of advance is along a sea-board.

Carrier-based aircraft are likely to be used to attack targets such as airfields, bridges, communication centres and troop concentrations, which are beyond the range of shore-based aircraft. The rapidity with which carriers can move to and operate in the area of hostilities is a great advantage, particularly when airfields are not available in the area.

Maritime Operations in the Cold War

6. The purpose of maritime operations in the Cold War is to protect the established order of the Free World against the subversive influence of Communism. These operations may be considered under the headings of assistance to the Civil Power and " flag-showing."

7. ASSISTANCE TO THE CIVIL POWER. In places where subversive elements have been at work, the population may become restive and unsettled, and there may be danger of disturbances breaking out either in consequence of a particular incident or during periods of political instability, such as general elections. Any disturbances which broke out would provide ammunition for Communist propaganda.

If sufficient notice of possible disturbance is received, the despatch of a warship to the area can often have an immediate stabilising effect, her mere presence being enough to discourage trouble-makers.

If disturbances have actually occurred and are beyond the resources of the Civil Power, the arrival of a warship and the landing of armed parties should prevent the spread of violence.

8. In some countries since the Second World War, dissident minorities have resorted to armed insurrection, as, for example, in Cyprus and Malaya. These rebellions have sometimes been on a large enough scale to require military operations to suppress them. The role of maritime forces is to support these operations by such action as patrolling the coast-line to prevent gun-running or the movement of rebels, bombarding rebel positions and transporting troops to landing places in rebel-held territory.

9. Another valuable role of maritime forces in the Cold War is the provision of assistance at natural disasters such as fires, earthquakes and floods. Such assistance may take the form of delivering urgently needed supplies or the provision of rescue, salvage, repair and first-aid parties. The propaganda and good-will value of such operations is immense.

10. " FLAG-SHOWING ". A successful good-will visit by even a small number of warships to a Commonwealth, Colonial or foreign port can do more to hearten the opponents of Communism than can many diplomatic notes, and it may form a useful supplement to such activities as propaganda broadcasts.

The development of good personal relations and the maintenance of a high standard of behaviour during these visits are an important contribution to the Cold War.

11. Allied Naval exercises, though primarily designed to test and develop command systems and tactical doctrine, can provide valuable evidence of the strength of the Free World and of its determination to resist aggression.

CHAPTER 19

Factors affecting Maritime Operations

"The advantage of time and place in all martial actions is half of victory, which being lost is irrecoverable."

Sir Francis Drake

1. The preceding chapters considered the various operations which may be undertaken to achieve the aims of British maritime strategy. This chapter discusses some important factors which affect the planning and conduct of those operations.

Physical Conditions

2. GEOGRAPHY. Geography determines the size and shape of the arena in maritime warfare. Close study of the hydrography (e.g., depth of water) and the topography (e.g., mountain ranges) in an intended area of operations is therefore essential in order to determine what is practicable and the best method of doing it.

3. CLIMATE. The effect of climate on personnel and equipment must be taken into account, and, where practicable, measures should be taken to mitigate it. For example, extreme heat lowers the performance of ships and aircraft and induces lassitude in men; tropicalisation of ships, aircraft and equipment, and issuing men with suitable diet and clothing, are among the measures which can be taken to counter the effects of heat. Extreme cold also reduces the efficiency of men and equipment; corresponding measures to those for extreme heat are necessary for continued functioning, although even with these the operation of guns and aircraft may be impracticable at times.

Another effect of extreme cold is to limit the area of operations by the extension of the ice pack.

4. WEATHER. Despite all modern scientific aids, weather has a profound influence on the conduct of operations; in particular, weather considerations often dominate amphibious operations and operations by coastal forces, and are a major factor in the employment of carrier-based aircraft. An accurate estimate of forthcoming weather conditions is therefore invaluable.

The meteorological organisation depends upon reports from the appropriate areas, and it may be necessary to dispose observers in these areas to provide the information required.

In strategic planning, it is necessary to estimate the probable weather conditions in an area many months in advance. This is relatively simple for areas such as the Tropics where the weather is characterised by seasonal changes, e.g., the monsoons. In higher latitudes, forecasting is more difficult because the weather varies greatly from day to day throughout the year; study of weather statistics over a period of years does, however, enable an assessment to be made of the likely weather conditions at a given time and place.

It must always be borne in mind, however, that all weather forecasts indicate no more than a probability; the chance of a marked departure from the average will always exist.

5. SEA CONDITIONS. Tidal streams and currents must be considered when planning amphibious and minelaying operations. Variations in the sea temperature and density, and the nature of the bottom, affect the efficiency of sonar, and allowance for this must be made in A/S operations.

6. DAY AND NIGHT. Although modern equipment, particularly radar, has done much to overcome man's inability to see at night, it is still necessary to consider carefully the best time of day at which an operation should be carried out, e.g., dawn is likely to remain the best time at which to launch a major amphibious operation.

7. SUMMARY. Physical conditions affect the planning and conduct of operations:—

(*a*) sometimes, by making them impracticable;

(*b*) frequently, by governing the season, date or time of day at which an operation can take place;

(*c*) always, by requiring careful preparation in the selection, equipment and training of the forces to be employed, and in making the best possible assessment of likely weather conditions.

Physical conditions are of equal concern to an enemy, and study of them assists in estimating his intentions.

Information and Intelligence

8. The successful conduct of operations requires:—

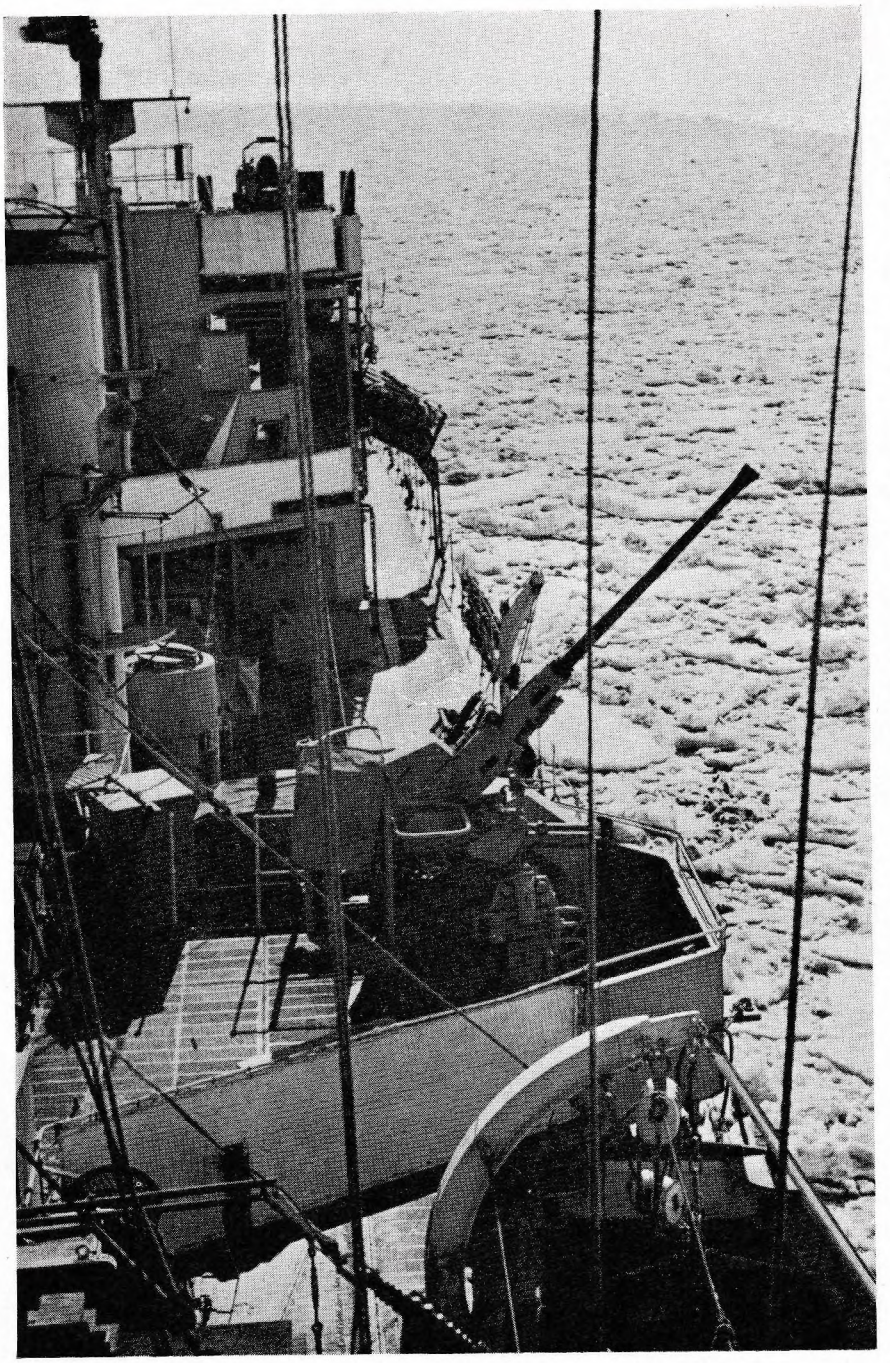
(*a*) full knowledge of the activities of one's own forces (" Information ");

(*b*) the best available knowledge of the activities of the enemy's forces (" Intelligence ").

9. Information concerning their own and allied forces should be available to all planning and operations staffs, and it is the responsibility of the Command to see that detached forces are supplied with enough of this information for their own purposes.

10. It is, however, important that this information is denied to the enemy; the measures to achieve this are known as " Security ". A major part of security is the use of codes and cyphers for passing classified messages. The integrity of codes and cyphers can be jeopardised by their improper use, and an enemy can deduce much information from excessive or indiscriminate radio traffic. Forces at sea must always consider before using their radio or radar equipment whether its use would divulge more information to the enemy than the circumstances justify. The instructions for the use of radio and radar equipment in a force at sea are known as the " Radio Policy " of the force; the Force Commander will direct what Radio Policy is to be followed. It will seldom be necessary to maintain radio silence in the presence of the enemy, but in some circumstances the use of radar may help the enemy more than it helps the Force itself.

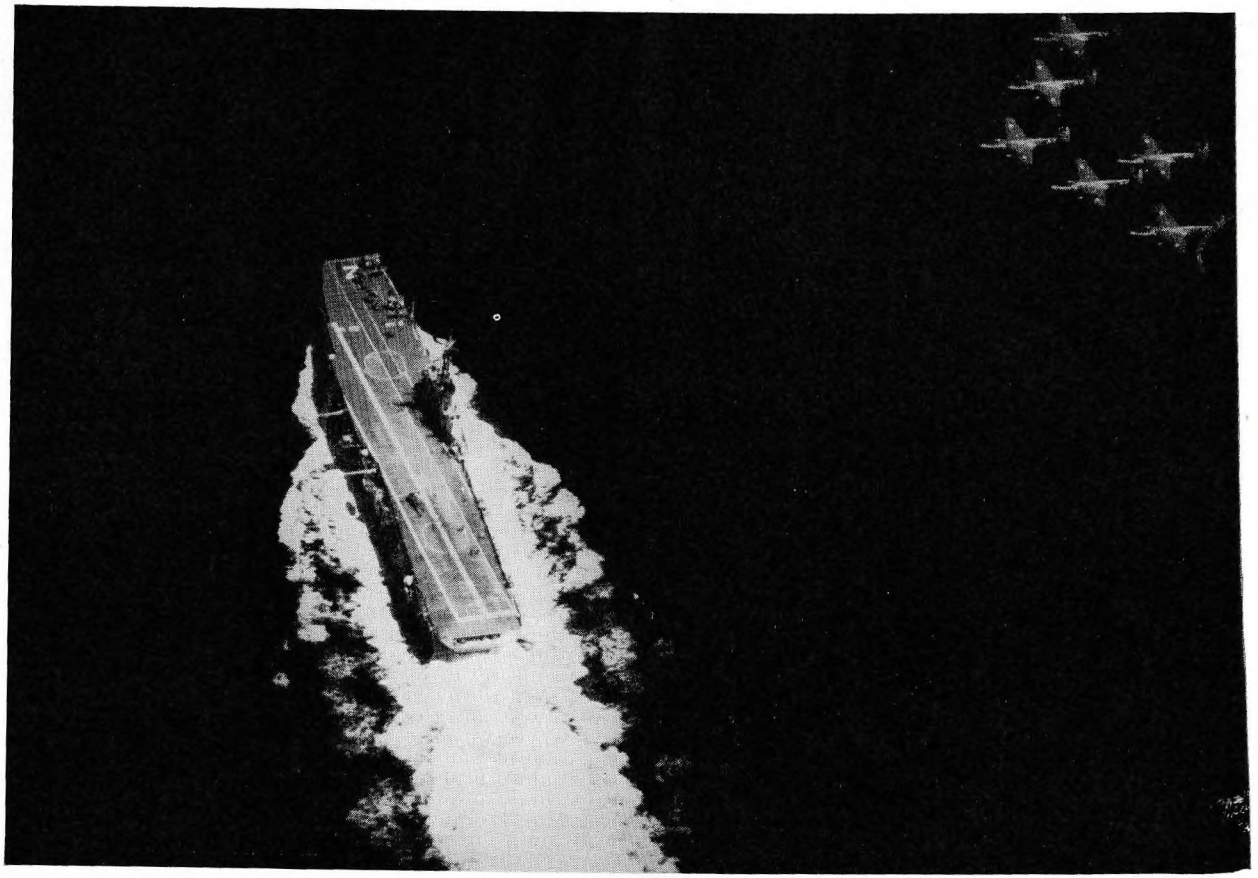
11. A second important part of security is the prevention of information reaching the enemy through careless talk, unguarded written statements or Press Releases, publication of photographs revealing new types of equipment and the loss of classified books and documents. Ideally, classified information should only be disclosed to those who really " need to know ". Morale depends, however, on all personnel knowing what they are doing, and why, and overall efficiency demands that every man should have all the information necessary for him to do



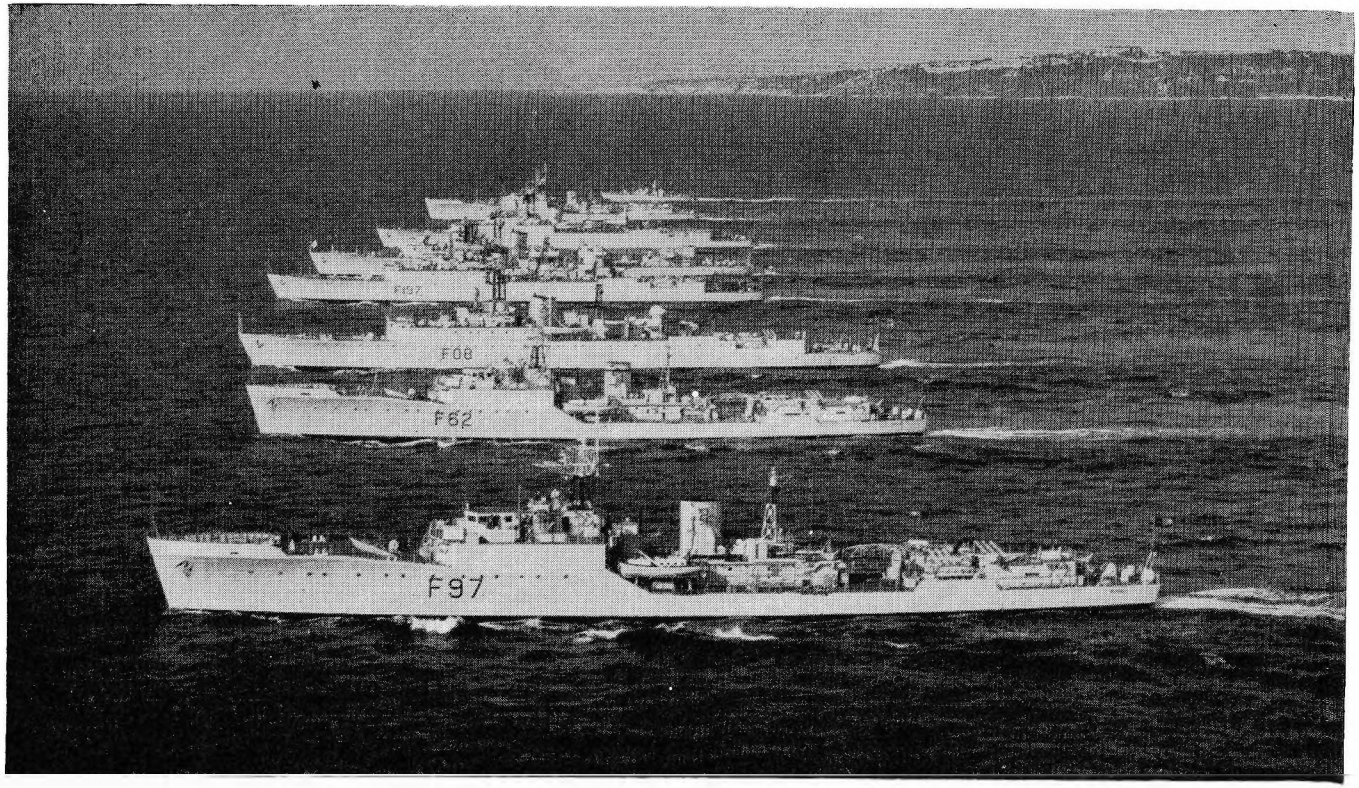
18. A DESTROYER IN PACK ICE



19. Scimitar landing on H.M.S. *Ark Royal*



20. Sea Hawks over H.M.S. *Bulwark*



21. A SQUADRON OF FRIGATES

his job properly. Careful judgment is therefore needed to ensure that too rigid a degree of security does not impair morale and efficiency; and that as much information as practicable is released; e.g., it would normally be quite in order to tell ships' companies the details of an operation after the ships have sailed.

Postal and photographic censorship is essential in wartime to prevent the intentional or unintentional disclosure of information to unauthorised persons. The normal precautions for the safe custody of C.B.s, S.P.s and classified documents assume even greater importance in war.

12. The collection of Intelligence is a continuous process in both peace and war. Sometimes, a single piece of intelligence (e.g., information concerning the movement of an enemy force) may be sufficient to set in motion a particular operation. In general, however, it is necessary to fit together a mass of apparently disconnected pieces of information until a complete picture emerges.

13. Intelligence has no value until it is placed in the hands of those who can take action on it; the distribution of intelligence is therefore as important as its collection. The next worse thing to having no intelligence is having the intelligence but keeping it shut up.

14. Intelligence common to all three Services is handled by the Joint Intelligence Bureau in the Ministry of Defence. The Naval Intelligence Organisation is controlled by the Director of Naval Intelligence; details of this organisation are in the *Manual of Naval Intelligence*.

15. Methods of obtaining intelligence include espionage, study of enemy publications, interception of enemy broadcasts and reconnaissance. The last method is of particular importance in obtaining operational intelligence (i.e., information of the movements of enemy warships). Reconnaissance missions can be undertaken by surface ships, but nowadays are more usually left to aircraft and submarines. Where reconnaissance of a particular area is necessary for planning an operation, care must be taken not to jeopardise surprise by undue reconnaissance activity in that area.

Photographic air reconnaissance requires specially trained " photographic interpreters " to deduce the maximum information from the photographs.

Location of the Enemy's Vital Interests

16. Study of geography, economics and intelligence will reveal the location of the enemy's vital interests and the main transport routes on which they depend. Such study is an essential preliminary to operations against strategic targets. It may also lead to the planning of operations with the object not only of causing immediate embarrassment to the enemy's war effort, but also of exposing him to further attack. For example, a seemingly unimportant coastal route may be the only means by which a vital commodity can reach the enemy. Operations to close this route, by minelaying or submarine attack, may either result in the shipping having to move further out to sea, where it can be more easily intercepted, or throw an insupportable burden on an already overladen inland route. Similarly, air attacks on rail or canal traffic may force the enemy to send vital traffic by sea and thereby expose it to attack by maritime forces.

Comparison of Forces

17. Consideration of all the above factors (physical conditions, information and intelligence, and location of the enemy's vital interests) will show what operations are possible and desirable.

The next factor to be considered is the forces necessary to overcome the expected degree of enemy opposition to these operations. It is therefore necessary to determine:—

(*a*) what force to make available to achieve the aim of an operation,

or

(*b*) if the available forces are limited, to what extent the scope of the operation must be modified.

18. Accurate comparison of forces is not easy even when the units on each side are of similar types. Numbers and "paper" strength alone are an unreliable basis of assessment; factors such as morale, state of training, reliability of equipment and efficiency of organisation, must also be taken into account. Comparison is even more difficult when the opposing forces are of different types (e.g., when a force of submarines is to operate in enemy-controlled waters).

Much help can, however, be obtained by continuous study of intelligence concerning the enemy; study should not be confined to recent operational intelligence but should also include the knowledge built up over the years of the history, habits and doctrine of the enemy.

"A Favourable Balance of Exchange"

19. Destruction of the enemy's maritime forces is either the aim or a task in all maritime operations, and must therefore be considered in the planning and allocation of forces. Allowance must also be made for the probable losses of one's own forces.

In considering this factor, the aim is to inflict greater damage on the enemy than is sustained by one's own side. This is known as achieving "a favourable balance of exchange." Exceptionally, however, the aim of an operation may be so important as to justify accepting an unfavourable balance; for example, the need to get a supply convoy through to a beleaguered base may be so great that the risk of heavy losses among the protecting forces can be accepted.

Denial of Vital Resources to an Enemy

20. A country uses many resources in waging war, some of which can only be replaced slowly or partially, if at all, and some of which have to be obtained from other countries. If, therefore, an enemy can be deprived of resources vital to his war effort, or compelled to expend them more quickly than they can be replaced, critical shortages will arise which will affect his ability to wage war. Such vital resources include food, fuel, raw materials, industrial installations and communications (i.e., ships, railways, motor transport, canals).

In the past, operations designed to deprive an enemy of vital resources have rarely been so effective as to compel him to surrender for lack of means to prosecute the war; the United States blockade of Japan during the Second World War had almost achieved this when the war ended in August, 1945. Nevertheless, such operations have often had a powerful influence on the course of a war; for example, German attacks, mainly by submarine, on British shipping in the Atlantic during both World Wars compelled Britain to divert a major part of her war effort to protecting the shipping.

In planning operations, therefore, consideration must always be given to the effect they will have on the enemy's vital resources.

CHAPTER 20

Warships, Maritime Aircraft and Weapons

"Ships and weapons may change, but the strategical and tactical principles governing their employment in war remain constant."

Admiral Sir Herbert Richmond

1. Basically, warships and naval aircraft are mobile weapon-launching platforms; their purpose is to bring a weapon to bear on the enemy—usually on his ships and aircraft, or their bases.

2. The fundamental requirements of a maritime fighting unit are therefore:—

MOBILITY. The capability to ascertain the location of a target and to carry a weapon to a position from which it can be launched against that target. The two aspects of mobility are speed and endurance.

STRIKING POWER. The capability to determine the exact position of a target and to launch a weapon or weapons which can destroy or damage that target.

DEFENCE. The capability to withstand enemy attack.

ACCOMMODATION AND HABITABILITY. These determine the physical and mental ability of the crew to maintain and fight the unit.

3. It is not practicable for one single ship or aircraft to embody all these requirements to the extent necessary for all maritime operations. Ships and aircraft are therefore of different types, each type embodying the requirements necessary for its designed role.

Balanced Forces

4. The existence of different types of ships and aircraft introduces the conception of a "balanced force." A balanced force is one which is so constituted that it is capable of carrying out specific operations, i.e., it collectively possesses all the requirements needed to carry out those operations.

5. Thus, for example, a modern carrier force is a balanced force for strike operations, the full requirements being met as follows:—

MOBILITY. By the force's ability to scout and to move to a suitable flying-off position, and by the strike aircraft's ability to reach the target from that position.

STRIKING POWER. By the strike aircraft's ability to carry the required weapons to a launching position within range of the target area, and to discharge them accurately.

DEFENCE. Against air attack—by fighters, radar "pickets" and the carriers' and ships' own armour and armament.

Against surface attack—by strike aircraft not employed on the main strike and by the ships' guns.

Against submarine attack—by A/S vessels and A/S aircraft. Each ship and aircraft also depends, in varying degrees, on its own speed and manoeuvrability for protection.

ACCOMMODATION AND HABITABILITY. The ships' companies can live on board for an indefinite period, provided replenishment is available. If the force is

operating in extreme climates, special provision will have been made to ensure that the ships remain habitable. The habitability of aircraft is sufficient for the air crews to carry out one sortie without relaxation; in some roles (e.g., fighters) aircrews can do three or even four sorties a day.

Communications

6. The need for a number of ships to operate together to form a balanced force introduces another requirement additional to those stated in paragraph 2—the ability to communicate with other ships and aircraft.

Moreover, under modern conditions, it is often necessary to co-ordinate operations by several forces. Commanders-in-Chief therefore need to have good communications with their subordinate Commanders.

The Design of Ships

7. ROLE. Before a ship is designed, the Naval Staff state the " Staff Requirements," which specify her intended role in maritime operations, and in particular whether she will operate independently, or as part of a balanced force, or both. The design is then based on the Staff Requirements. In drawing up the design, the following factors must be considered and in each case, a balance has to be struck between what is desirable and what is practicable.

8. ARMAMENT. This includes both the weapons necessary to fulfil the intended role and the detecting and control systems for bringing the weapons to bear on a target.

9. DEFENCE. A ship must be capable of withstanding enemy attack, both until her striking power has taken effect, and, if necessary, subsequently. Defence may be obtained in two ways:—

(*a*) *Static defence* which includes armour, underwater protection and watertight sub-division.

(*b*) *Active defence* which includes defensive armament and the ability to carry out evasive tactics, e.g., submarines conceal themselves by submerging, small ships rely on speed and manoeuvrability.

10. SPEED AND ENDURANCE. It is necessary to decide the maximum and cruising speeds at which the ship will need to operate in her intended role, and the endurance required, and to design the machinery accordingly. The weight and space taken up by machinery, and that by fuel, are to some extent interchangeable in design; but, in general, the higher the maximum speed or endurance required, the greater will be the total weight and space taken up by machinery and fuel.

Another aspect of endurance is the ability to carry ammunition for the weapons, stores for maintenance of material and provisions for victualling the ship's company.

11. ACCOMMODATION AND HABITABILITY. There must be sufficient space for the ship's company to live in reasonable comfort; otherwise, their efficiency will suffer. In small ships, reduced standards have to be accepted, and the crews of submarines, small minesweepers and coastal forces craft usually live in depot ships between operations.

12. STABILITY. Like other ships, warships must be able to remain at sea in all weather conditions likely to be encountered during their operations. In addition, they must have sufficient stability to survive reasonable action damage without

sinking or developing a heavy list. They should not be liable to excessive movement in normal conditions, because otherwise it would be difficult to use the armament and equipment efficiently, and to maintain the ship's company in a high state of physical and mental efficiency.

13. Size and Cost. Size alone confers material advantages because the bigger the ship, the smaller the percentage of her weight required for hull and machinery, and consequently the greater the percentage available for armament and other purposes.

In practice, however, warships are no bigger than is necessary for them to carry out their intended roles, because:—

(*a*) the larger the ship, the greater is the number of men needed to man her;

(*b*) the capacity of harbours and canals imposes restrictions on the movements of large ships;

(*c*) the limited number of docks able to take large ships affects, to some extent, the areas in which they can be employed; and

(*d*) the cost of building and maintaining large ships is very high.

It follows from (*d*) that, within a limited Naval Vote, it is possible to have either a small number of big ships or a larger number of medium-size and small ships. In planning the shape and size of the Fleet, a balance has to be struck between these two extremes; an important consideration in striking this balance is the fact that it is undesirable to have a high proportion of big ships, because the loss or absence of even one big ship would involve a considerable reduction in the overall strength available.

The Design of Aircraft

14. From 1955 onwards, aircraft have been designed under what is known as "The Weapon System Concept." This means that a chief designer is responsible for co-ordinating a complete system, including radar, sights, computors, navigation equipment, etc., as well as the airframe and engines, to meet a requirement laid down by the Naval Staff.

In addition, when planning an advanced aircraft, the chief designer has to take into account, in his calculations, the performance and capabilities of the controlling ship.

15. Role. Although aircraft are designed to carry out one primary role, most also have one or more secondary roles (e.g. Fighter/Strike/Minelaying). This is because the number of aircraft which can be carried in an aircraft carrier is limited, and it is necessary, in order to achieve flexibility, for each aircraft carrier to be able to undertake as many types of operation as practicable.

It is important, however, to ensure that the capability of performing a secondary role does not prejudice an aircraft's performance in its main role.

16. Armament. Aircraft armament has become highly complex and varied. An aircraft carrier may be expected to carry the following types of armament stores together with their large and complicated testing facilities:—

Nuclear weapons; air-to-air guided missiles; A/S torpedoes; and conventional rockets, bombs and mines.

17. Speed and Endurance. The importance of these two factors naturally varies from type to type. Fighters require high speed for interception and attack; in scouting aircraft, endurance is generally more important than high speed; A/S aircraft need to be capable of slow speeds at low altitudes. The high

fuel consumption of pure jet engines at low altitudes makes them unsuitable for roles such as A/S operations.

In-flight refuelling enables strike aircraft to extend their range.

18. ACCOMMODATION. Many highly-complex problems have to be solved in striking the correct balance between the space and weight allowed for aircrew and that allowed for weapons and equipment.

19. SIZE AND WEIGHT. These apply particularly to carrier-based aircraft, the weight of which is limited by the capacity of catapults for take-off and of arrester gear for landing and also by the strength of the flight-decks in existing aircraft carriers. Stowage and handling problems limit the maximum size.

20. DEFENCE. In Naval aircraft, there is no space or weight available for physical protection or defensive armament. They rely on speed and/or manoeuvrability for protection.

Large shore-based maritime aircraft are usually fitted with anti-air defensive guns.

21. COST. Modern aircraft are complex and very expensive. With limited funds available, it may be necessary to choose between a small number of ideally-equipped aircraft and a larger number fitted with less sophisticated equipment.

22. CAPACITY OF THE AIRCRAFT INDUSTRY. Naval aircraft are designed by firms to requirements agreed by the Admiralty with the Ministry of Supply. It may sometimes be necessary to compromise between Naval requirements and the aircraft industry's capacity, in order to obtain the desired number of aircraft within a specified time.

The Design of Weapons

23. OPERATION. It must be practicable to operate the weapon under all conditions likely to be encountered by the ship or aircraft carrying it.

It is important that the number of men required to operate each weapon should be kept to a minimum, because accommodation in modern ships is limited by the space required for the armament.

24. MAINTENANCE. Maintenance of the weapon prior to use, or between periods of use, must be practicable within the resources available on board the ship or at the aircraft's base, and should not require heavy expenditure of labour.

25. MANUFACTURE AND COST. Weapons likely to be required in large numbers should be suitable for mass production. The design should be as simple as practicable within the required performance, in order to reduce costs.

26. STANDARDISATION. Standardisation of weapons in use by Allied maritime forces is now practised, where possible, in order to reduce the logistic problem when Allied forces are operating together.

HISTORICAL

The Development of Warships

27. In tracing the development of warships, there are three main factors to be noted:—

(*a*) *The Method of Propulsion.* Oars, sail, coal-fired steam, oil-fired steam, diesel, gas turbine, nuclear propulsion.

(*b*) *The Material used in Construction.* Wood, iron, steel.

(*c*) *The Armament.* Men-at-arms, cannon, breech-loading guns, the ram, torpedoes, mines, A/S weapons, electronic warfare equipment, guided weapons.

Ship-borne aircraft for strike, scouting, A/S and air defence.

28. Oared Galleys. The predominant type of early warship was the galley propelled by oars and, in favourable wind conditions, by sail. The oars were invariably used in action and gave the ship good manoeuvrability.

The armament consisted of men-at-arms, stationed at both ends of the ship, and a reinforced bow for use as a ram; later, small cannons were also carried. Tactics consisted of a combination of ramming and boarding, the issue being settled by hand-to-hand combat.

The main disadvantages of galleys were:—

(*a*) poor sea-keeping qualities, due to the low free-board necessary for using the oars;

(*b*) poor endurance, due to the fact that a large proportion of the available space was occupied by the rowers, and only small supplies of water, provisions and stores could therefore be carried.

(*c*) they could not mount broadside guns.

In consequence, galleys were only operated in comparatively sheltered waters and close to land.

29. Sailing Ships. Galleys were unsuitable for mercantile use and sailing ships with good cargo capacity were used for trade. In time of war during the Middle Ages, some of these ships were converted into warships by the addition of fore and after-castles for use as fighting positions by men-at-arms. These ships were slow and cumbersome, and their tactical manoeuvrability was poor. They were mainly used for transporting soldiers. When battles at sea took place, tactics consisted of laying alongside the enemy and boarding.

30. The development of heavy cannon suitable for use in ships early in the sixteenth century made it difficult to convert merchant ships into satisfactory warships, and, in consequence, the purely sailing warship, specially designed as such, was developed.

Three main types of such warships were built during the following three hundred years:—

(*a*) *Ships-of-the-Line*—large, heavily-armed ships capable of standing up to the heaviest enemy warship, and mainly operated in fleets or squadrons.

(*b*) *Frigates*—smaller and more lightly-armed ships, used as scouts for the main fleet and as escorts to convoys. Their speed and manoeuvrability enabled them to evade action with more powerful ships.

(*c*) *Minor war vessels*—small, fast, very lightly-armed craft used for communications, and also for scouting and convoy escort.

31. The main features of sea warfare during this era were:—

(*a*) *The Fleet Action* in which opposing ships-of-the-line were drawn up into tactical formations when contact was made and the issue was settled by close action.

(*b*) *Trade Protection* in which ships-of-the-line and frigates fought innumerable small actions against raiders and privateers.

The dependence of all ships on the wind made gaining and holding the weather gauge the cardinal rule of British tactics.

32. Developments between 1815 and 1914. During the nineteenth century, fundamental changes occurred in all three of the main factors in the development of warships. These changes resulted in the appearance of a variety of entirely new types of warship and, consequently, a revolution in naval tactics.

The principal changes are discussed briefly in the following paragraphs.

33. Method of Propulsion. The early steam-ships were driven by paddle-wheels, which were unsuitable for warships, because they were vulnerable to damage in action and limited the number of broadside guns which could be fitted. The development of an efficient screw overcame these disadvantages and steam propulsion gradually replaced sails.

The early marine engines had poor endurance, due to their low efficiency and the limited quantity of fuel which could be carried. In consequence, steam engines were regarded as auxiliary to sail until the 1880's, when improvements in machinery design and in the fuel capacity made it practicable to design warships propelled only by steam.

Coal was the main fuel, but by 1914, some ships were designed to burn oil fuel. The greater convenience and efficiency of the latter made it inevitable that it would ultimately replace coal altogether.

The introduction of the steam turbine into warships in 1900 made possible the use of engines of much greater power in the space available.

34. Material used in Construction. At the beginning of the period, all ships were built of wood. The greater power of weapons made it necessary to increase the protection in ships and this was originally provided by fitting sheets of iron over the wooden hull ("iron-clads"). Subsequently, ships were constructed wholly of iron. Iron was later replaced by steel which has greater strength and durability.

35. Armament. The muzzle-loading cannon used during the Napoleonic Wars were very little different from the guns used at the time of the Spanish Armada. The development of breech-loading guns with rifled barrels, which could fire explosive shells, greatly increased both the hitting power of ships and the range at which this power could be effective. Moreover, the installation of these guns in revolving turrets or mountings made it possible to engage a target without necessarily turning broadside-on.

The use of metal in ship construction, together with the manoeuvrability conferred by steam propulsion, brought about a revival of the ram as a weapon, and for a period during the latter part of the 19th century, the ram was regarded as the principal naval weapon. However, the invention of an entirely new weapon—the torpedo—made it impracticable for heavy ships to engage an enemy sufficiently closely to ram and the gun therefore resumed its place as the principal naval weapon. Nevertheless, a ram was included in the design of heavy ships until after the First World War.

The torpedo first appeared in a practicable form in the 1880's, and brought about a revolution in naval warfare because, for the first time, it enabled a small ship to engage and destroy a much larger enemy. The effective range of the early torpedoes was less than 300 yards, but this was gradually increased to about 10,000 yards by 1914. Small warships, known as torpedo boats, were designed with torpedoes as their main armament.

Another new weapon which appeared during this period was the contact mine. Mines could either be moored in shallow water (e.g., in the approaches to harbours) or be dropped to float in the grain of an approaching enemy.

36. Three other developments occurred during this period which had a profound influence on maritime warfare:—

The Submarine. The invention of a submarine warship introduced the third dimension into naval warfare. The submarine's invisibility enabled it to operate in areas denied to surface warships, and conferred on it great advantages in both attack and defence. Its primary weapon was the torpedo, but most submarines were fitted with guns for attacking lightly-armed opponents. They could also carry mines at the expense of their torpedo armament. Their limited underwater endurance and speed did, however, restrict their ability to attack fast surface ships.

Wireless. The discovery of wireless enabled ships to receive orders when beyond the range of maximum visibility. This was important at a time when weapon developments were resulting in great increases in the range at which surface actions could be fought. It also enabled the Commander to be provided with up-to-date information and intelligence covering a much wider area.

Aircraft. In 1914 aircraft were not sufficiently developed to have an important effect on warship design and tactics, but their influence became increasingly apparent during the course of the First World War.

The First World War (1914-1918)

37. The consequence of the developments discussed in the preceding paragraphs was that at the outbreak of the First World War, warships consisted of the following main types:—

Battleships. Heavily armed and protected, but comparatively slow, ships designed to oppose the heaviest enemy ships.

Battle-cruisers. Heavily-armed, but fast and comparatively lightly protected, ships designed to support cruisers in their scouting operations, and also to destroy enemy cruisers. Their light armour made them unsuitable for action with battleships.

Heavy cruisers. Medium-armed ships with some protection, designed to patrol the oceans in order to protect trade against surface raiders; and to support battleships and battle-cruisers in fleet actions.

Light cruisers. Fast, lightly-armed ships designed to act as scouts for battleships and to attack light enemy forces.

Torpedo boats were designed solely to carry out torpedo attacks on heavy ships. They were later replaced by destroyers.

Destroyers (originally called "Torpedo-Boat Destroyers"). Very fast and manoeuvrable ships designed both to protect battleships and battle-cruisers against attack by torpedo boats and to carry out such attacks on enemy battleships.

Minelayers were of two types. Fast ships for laying mines off enemy harbours; and slow ships of good capacity for laying defensive minefields off friendly harbours or in enemy transit areas.

Minesweepers. These were usually converted gunboats or fishing vessels. Their task was to sweep channels through enemy minefields laid in the approaches to naval bases.

Submarines were designed to operate off the enemy's bases in a scouting role, and to attack targets beyond the reach of surface forces.

38. The balanced force for strike operations during the First World War was the Battle Fleet, which consisted of battleships, preceded by battle-cruisers, both escorted by destroyers, with a screen of light cruisers scouting ahead of the main force.

39. The warships described above were supplemented during the war by the following:—

Sea-plane carriers which carried a small number of aircraft for scouting or small strikes on shore targets.

Monitors. Light-draught ships mounting a small number of heavy guns for bombarding enemy shore targets.

A/S vessels. The development of the German U-boat as a commerce raider made it necessary to provide ships specifically for A/S operations. These consisted of destroyers, sloops, fast patrol craft and trawlers fitted with hydrophones and carrying explosive sweeps and/or depth-charges.

Shore-based aircraft. Aeroplanes were used mainly for A/S operations. A number of airships (blimps) and manned kite-balloons were used for both scouting and A/S operations. Aircraft had no weapon capable of destroying a submerged submarine.

Coastal Forces. Some fast motor-boats, armed with guns or torpedoes, were developed for attacking enemy light forces and coastal convoys.

Armed Merchant Cruisers. Some passenger liners were fitted with guns, and employed on trade protection and blockade duties.

Between the Wars (1919-1939)

40. The principal developments between the two World Wars were concerned with aircraft, anti-submarine equipment and radar.

41. AIRCRAFT-CARRIERS. As the capabilities of aircraft improved and their operation from flight-decks became practicable, aircraft-carriers came to form part of the battle-fleet. The tasks of their aircraft were scouting, strikes against enemy ships, and air and anti-submarine defence of the battle-fleet. Bad weather and visibility could, however, prevent flying operations and for this reason aircraft did not wholly replace cruisers and battleships for scouting and strikes.

During this period, naval aircraft were of two main types: fighters for air defence, and torpedo-spotter-reconnaissance aircraft, which were " maids-of-all-work," able to carry out scouting, A/S patrols, torpedo-bombing, high-level bombing and dive-bombing sorties. Most of these aircraft were conversions of R.A.F. types, though specialised naval aircraft were produced in the late 1930s.

42. BATTLESHIPS. Battleships remained basically unchanged, though the increasing air threat made it necessary for them to be fitted with an anti-aircraft armament. Some were equipped with aircraft for scouting and gunfire spotting.

43. CRUISERS. Cruisers were still considered an essential part of the battle fleet, but their importance in this role was diminished as carrier aircraft became available for scouting and as destroyers became larger and more sea-worthy. The importance of cruisers for protecting merchant ships against surface raiders continued, and most were equipped with amphibious aircraft for scouting.

Later types of cruisers were fitted with dual-purpose (anti-ship and anti-aircraft) guns. Some old cruisers were re-armed entirely with anti-aircraft guns in order to contribute to the air defence of the battle-fleet.

44. DESTROYERS. Destroyers continued to be designed primarily for carrying out torpedo attacks on enemy heavy ships, but the importance of protecting the battle-fleet against submarines, aircraft and mines had an increasing effect on destroyer design.

Later types of destroyers were fitted with dual-purpose guns.

45. MINELAYERS. A small number of very fast minelayers were designed for minelaying at night close to enemy coasts; they did not come into service until after the outbreak of war.

46. MINESWEEPERS. Some destroyers were equipped for Fleet Minesweeping, and a number of sloops, designed for both Fleet Minesweeping and convoy escort, were built.

Some trawler-minesweepers were built for working along coastal shipping routes.

47. SUBMARINES. Small numbers of submarines were built for special roles (e.g., R-class for A/S operations, K-class for fleet scouting, M-class for shore bombardment), but the main trend of submarine development was for scouting, torpedo-attacks and minelaying in waters beyond the reach of surface ships.

48. SHORE-BASED AIRCRAFT. For various reasons, little progress was made in the development of shore-based aircraft for maritime operations such as scouting, A/S escort and strikes against enemy shipping.

49. ARMAMENT. No new weapons appeared during the period but some developments of existing types (e.g., the dual-purpose gun, the aircraft torpedo) were made to meet new requirements. The Director System, first introduced at the end of the First World War, and improved fire-control equipment were fitted in all ships.

50. Detection Devices

Radar. The discovery that radio waves are reflected and that the reflected waves can be received and amplified led to the development of radar equipments for detecting aircraft, and, later, ships, and obtaining ranges and bearings on them. This not only gave much greater information of the approach and movements of an enemy but also enabled more accurate use to be made of gun and torpedo armaments.

Asdic. The difficulty of locating a silent, submerged submarine was to some extent overcome by the development of the asdic. This employed reflected sound waves to indicate the position of a submerged object, but its range and reliability were limited.

The Second World War (1939-1945)

51. The principal developments during the Second World War were the emergence of the aircraft-carrier as the main fleet unit; the decline of the battleship due to its vulnerability to air attack and the short range of its weapons; the introduction of large numbers of specialised A/S vessels; the greatly extended use of shore-based aircraft for maritime operations; and the introduction of Afloat Support to enable forces to operate for long periods away from their bases.

52. FLEET AIRCRAFT-CARRIERS. Carrier-borne aircraft proved their effectiveness not only against enemy warships and submarines, but also against land targets. With the development of radar for air warning and aircraft direction, carrier-borne fighters became the primary means of defence against enemy aircraft.

Fleet aircraft-carriers thus assumed increasing importance in both the strike and defence elements of a balanced force.

53. BATTLESHIPS. As aircraft developed, the importance of battleships gradually declined. The great fleet actions of the U.S. Navy in the Pacific, many of which

were fought mainly by carrier-based aircraft while the forces were well outside gun-range, demonstrated that the day of the battleship as the main fleet unit was passing. Nevertheless, battleships took part in surface actions when aircraft were not available or could not be operated due to bad weather, and they gave useful service in escorting and supporting convoys and in supporting amphibious operations.

54. CRUISERS. The role of cruisers as fleet scouts was increasingly taken over by aircraft. Cruisers were thus mainly employed on operations to protect merchant ships, on operations against enemy merchant ships, and on strikes against enemy light surface forces.

55. DESTROYERS. There were comparatively few opportunities for destroyers to carry out torpedo attacks on ships, and the requirement to defend heavy ships against air and submarine attack became more and more important. In consequence, the A.A. and A S armament received greater emphasis in later designs of destroyers.

56. SUBMARINES. British submarines were designed mainly for scouting, strike and minelaying operations in the North Sea and Mediterranean. Later types, with greater endurance, were produced for anti-shipping operations in the Pacific. Midget submarines were developed for attacks on ships inside defended harbours.

57. A/S VESSELS. The Germans developed in their " U-boats " a large fleet of commerce raiders capable of ocean-wide operations against merchant ships. Large numbers of A/S vessels were needed to meet this threat, and were provided initially from older destroyers, by converting trawlers and by building corvettes. These proved, however, to be too slow or to have insufficient endurance when U-boats extended the area of their operations, and larger, faster vessels, known as " Frigates ", were built for escorting ocean convoys.

58. ESCORT CARRIERS. The value of aircraft in protecting merchant ships against air and submarine attack was quickly realised, and a number of small aircraft carriers were built for the primary role of operating with convoy escort and support forces. They were also used for other purposes, such as transporting replacement aircraft to Fleet carriers.

In addition, some merchant ships were adapted to carry aircraft, as well as their usual cargoes. These Merchantmen Aircraft-Carriers (MAC-ships) had a flight deck and carried four or six aircraft for the A/S defence of convoys. Some other merchant ships were fitted with a catapult and a single fighter aircraft for defence against air attack; these were known as Catapult Aircraft Merchantmen (CAM-Ships).

59. SHORE-BASED MARITIME AIRCRAFT. The value of aircraft for A/S operations led also to the development of very long-range (V.L.R.) aircraft for escorting and supporting convoys and for operating in U-boat transit areas. Initially, these aircraft were hampered by having to rely on visual sighting and by lack of an effective A/S weapon. Their effectiveness was very greatly increased by the development of centimetric radar, powerful searchlights for use in night attacks and a reliable aircraft depth-charge.

Shore-based aircraft were also used for strikes on enemy convoys and coastal shipping. Such attacks were carried out by " strike wings " which consisted of balanced forces of fighters, torpedo-bombers and rocket-firing aircraft.

60. MINESWEEPERS. The widespread use by the Germans of influence mines necessitated the production of a large number of minesweepers fitted with special equipment.

61. Fast Coastal Forces. Light fast craft armed with guns or torpedoes were built for attacks on, and defence of, coastal shipping in the English Channel and the North Sea, and in the Mediterranean.

Some slower Motor Launches were built to defend harbours against submarine attack.

62. Amphibious Warfare Craft. Large numbers of specialised craft were produced for amphibious operations. They included headquarters ships, landing ships (infantry), landing ships (tank), landing craft (infantry), landing craft (tank), landing craft (rocket batteries) and many others.

63. Afloat Support. Specially-equipped repair, replenishment and amenity ships were built to provide logistic support for the British Fleet in the Pacific.

64. Weapons and Equipment. The principal developments in weapons and equipment were:—

Guns. Radar enabled guns to engage targets which could not be seen, and the proximity (V.T.) fuze greatly increased the effectiveness of the Fleet's A.A. gunfire.

Torpedoes. "Homing" torpedoes which were guided to their target by the sound waves from its propellers were developed for use by, and against, submarines.

A/S weapons. Ahead-throwing A/S mortars enabled accurate attacks to be made on an evasive submarine. The improved aircraft depth-charge has already been mentioned.

A/S Equipment. Sonobuoys were designed to listen to the hydrophone effect from submerged submarines and transmit it to A/S aircraft. They were of limited range and reliability.

Mines. Mines actuated by various influences (magnetic, acoustic, pressure) and fitted with delayed arming devices made minesweeping more difficult.

Aircraft Weapons. Improved types of guns and bombs were introduced and were supplemented by rockets; these weapons tended to supersede the aircraft torpedo for use in strikes against ships.

Radar. Considerable improvements were made in the performance and reliability of all types of radar. Particularly important developments were the introduction of airborne radar for detecting both other aircraft and ships; and the invention of the Plan Position Indicator (P.P.I.)

65. Action Information Organisation. The development of communications and radar resulted in a greatly increased volume of information and intelligence being available to Commanders at all levels. The need to make the best use of this resulted in the development of the Action Information Organisation (A.I.O.), which was responsible for assimilating all operational information and intelligence and presenting the tactical picture to the Commander in a digestible form. An additional function of the A.I.O. was to provide information for the control and direction of aircraft and weapons.

The A.I.O. fitted in each ship was designed to be adequate for her intended role.

BRITISH MARITIME FORCES DURING THE PERIOD 1946-1957

66. During the decade since the end of the Second World War, the shape and size of British maritime forces has been affected by the following:—

(*a*) the development of nuclear and thermo-nuclear weapons;

(*b*) the building of the Soviet submarine fleet;

(*c*) the greatly increased air threat;

(*d*) the corresponding decline in the threat to surface ships from surface ships;

(*e*) the traditional Soviet use of mine warfare;

(*f*) the signing of the North Atlantic Treaty in 1949;

(*g*) the very high cost of modern ships, weapons and equipment.

67. The cumulative effect of these factors has been that, during this period, British maritime forces have increasingly been shaped for three separate roles:—

(*a*) protection of British interests during the Cold War;

(*b*) independent action in a small-scale limited war, and co-operation with allies in a large-scale limited war;

(*c*) co-operation with the maritime forces of other N.A.T.O. powers, principally the U.S.A., in a global war.

68. Against this background, British maritime forces in 1957 may be classified, broadly, under three headings:—

Strike Forces for attacking land targets and surface ships, and for supporting and launching amphibious operations. The principal strike force is the Carrier Group consisting of one or more aircraft-carriers, equipped mainly with strike aircraft and fighters, with an escort for defence against submarines and aircraft; the escort may contribute to the air defence of the Group by their air-warning radar or their firepower or both. Other strike forces are submarines, shore-based aircraft, coastal forces, and amphibious warfare ships and craft.

Shipping Escort and Support Forces for protecting merchant ships against submarine and air attack, and possibly against surface raiders. The principal shipping escort and support forces are frigates; Carrier Groups in which the aircraft-carriers are equipped with fighters and A/S aircraft; and shore-based maritime aircraft.

Mine Countermeasures Forces for keeping ports, bases and coastal shipping routes clear of mines, and for sweeping ahead of strike and amphibious warfare forces.

69. It was stated earlier in this chapter that each type of warship is designed for a particular role. In order to achieve flexibility, it is desirable that most ships should be capable of undertaking roles additional to that for which they have been specifically designed; in practice, the size of each type of ship limits the number of roles for which it can be equipped.

There is, therefore, no hard and fast division between the classification of maritime forces given in the preceding paragraph. For example, a frigate may be employed either as part of a Strike Force or on convoy escort and close support operations.

Types of Modern Warships and Maritime Aircraft (1957)

70. AIRCRAFT-CARRIERS. The aircraft-carrier emerged from the Second World War as the most powerful warship and she still holds this position in 1957; she is, in essence, a mobile air station. In recent years, the operational efficiency of aircraft-carriers has been greatly increased by such developments as the angled deck, the mirror landing sight and the steam catapult.

A great advantage of aircraft-carriers is their ability to undertake different operations by changing their outfit of aircraft. Thus, a carrier employed on strike operations would be equipped mainly with strike aircraft and fighters; by exchanging her strike aircraft for A/S aircraft, the same carrier would be able to carry out convoy support operations.

71. There are, however, three factors which require aircraft-carriers to operate in company with a number of smaller ships:—

(*a*) Their vulnerability to submarine attack necessitates an A/S escort. This escort may be assisted by A/S aircraft.

(*b*) The very high speed of modern aircraft and the range at which they can release missiles necessitates having earlier warning of the approach of enemy aircraft than could be obtained by the carrier's own radar. This may be provided by ships or aircraft fitted with air warning radar (" radar pickets ") which are stationed at varying distances from the carriers in the directions from which air attack is expected.

(*c*) There is little room in an aircraft-carrier for a defensive gun armament; she therefore requires to be protected by the anti-aircraft armament of escorting ships from attack by aircraft which have evaded her fighters.

72. Aircraft-carriers at present in service in the Royal Navy (with the exception of one " Commando Carrier ") are equipped to carry out both strikes and A/S operations. The main role of the Commando Carrier is to land assault troops by helicopter during amphibious operations; she could also be employed to a limited extent on A/S operations.

73. Naval Aircraft. The characteristics and types of present-day (1957) naval aircraft are:—

Strike Aircraft are single- or multi-seat aircraft capable of carrying a heavy weapon load (bomb, guided missile or rockets) and sufficient fuel for long ranges. They have a high cruising speed and a high maximum speed for use during an attack, but speed is secondary to load capacity and endurance. The range of strike aircraft may be increased by in-flight refuelling.

The role of strike aircraft is to attack ships and land targets and to provide ground support for land forces.

Fighter Aircraft are single-seat aircraft for day operations and multi-seat for all-weather operations. They have a heavy forward-firing armament of guns or rockets. The primary requirements are high speed, good manoeuvrability and high performance in climb.

The main role of fighters is air defence of ships; they can also be used for photographic reconnaissance, for short range strikes with rockets and small bombs, and for supporting amphibious operations in both air defence of the bridge-head and ground support.

A.E.W. Aircraft are multi-seat aircraft fitted with air warning radar. Their tasks are to give early warning of the approach of low-flying enemy aircraft, and to direct fighters to intercept. They may also be employed in the surface scouting role.

Anti-submarine Aircraft are multi-seat fixed wing aircraft or helicopters.

(*a*) The fixed wing aircraft is equipped with radar, and sonobuoys for the detection of submarines. It carries a weapon load of either rocket projectiles, depth charges or A/S homing torpedoes.

Good manoeuvrability and long endurance at slow speed at low altitudes are essential.

In addition to the primary A/S search and strike role, the aircraft can be employed on surface scouting, strikes against merchant ships, and minelaying.

(*b*) The helicopter's detection equipment consists of a Dipping Asdic set, the transducer being lowered to below the surface from the helicopter, when hovering. Present A/S helicopters can only carry either an asdic set or a homing torpedo,

but a new helicopter is under development capable of carrying both an asdic set and homing weapons.

It is likely that the helicopter will be the A/S aircraft of the future.*

Helicopters. In addition to the A/S role, helicopters are used for Search and Rescue. Minesweeping with helicopters is under consideration.

The use of helicopters for landing troops in amphibious operations has already been mentioned.

74. SUBMARINES. The outstanding advantage of submarines is their invisibility when submerged. This enables them to operate unsupported and to maintain their striking power in the presence of enemy surface forces, though this power will be restricted by efficient enemy A/S measures. It is desirable that submarines should have as high a silent speed as possible when submerged in order not to reveal their whereabouts to listening A/S forces.

75. Submarines may be divided, broadly, into two classes:—

(*a*) " Submersibles " which may be Snort-fitted, are dependent on access to the atmosphere for prolonged operation;

(*b*) " True submarines ", which are designed for maximum continuous submerged performance.

76. All operational submarines in the Royal Navy at the present time are submersibles. The principal disadvantage of submersibles is that their underwater endurance, on which their ability to operate unsupported mainly depends, is limited. Snort-tubes enable submersibles to ventilate and charge batteries and to proceed on their diesel engines whilst at periscope depth, but snorts can often be detected by alert A/S forces.

The aim is to produce a true submarine which has high underwater speed and vastly increased submerged endurance. This aim has been achieved in true submarines propelled by nuclear power. Other systems of propulsion can give high submerged speed, but cannot equal the endurance which can be obtained by using nuclear power.

77. The main armament of all submarines consists of torpedoes (straight-running, pattern-running or " homing ") for attacks on ships and submarines and for defensive use against A/S forces.

Submersibles may also be fitted with guns for use against lightly-armed ships, aircraft and shore targets.

All submarines can carry mines at the expense of their torpedo armament.

78. British submarines now in service were designed for scouting and strike operations in the vicinity of enemy coasts and along the routes followed by enemy merchant ships; since 1948, however, the primary role of the British submarine fleet has been anti-submarine operations.

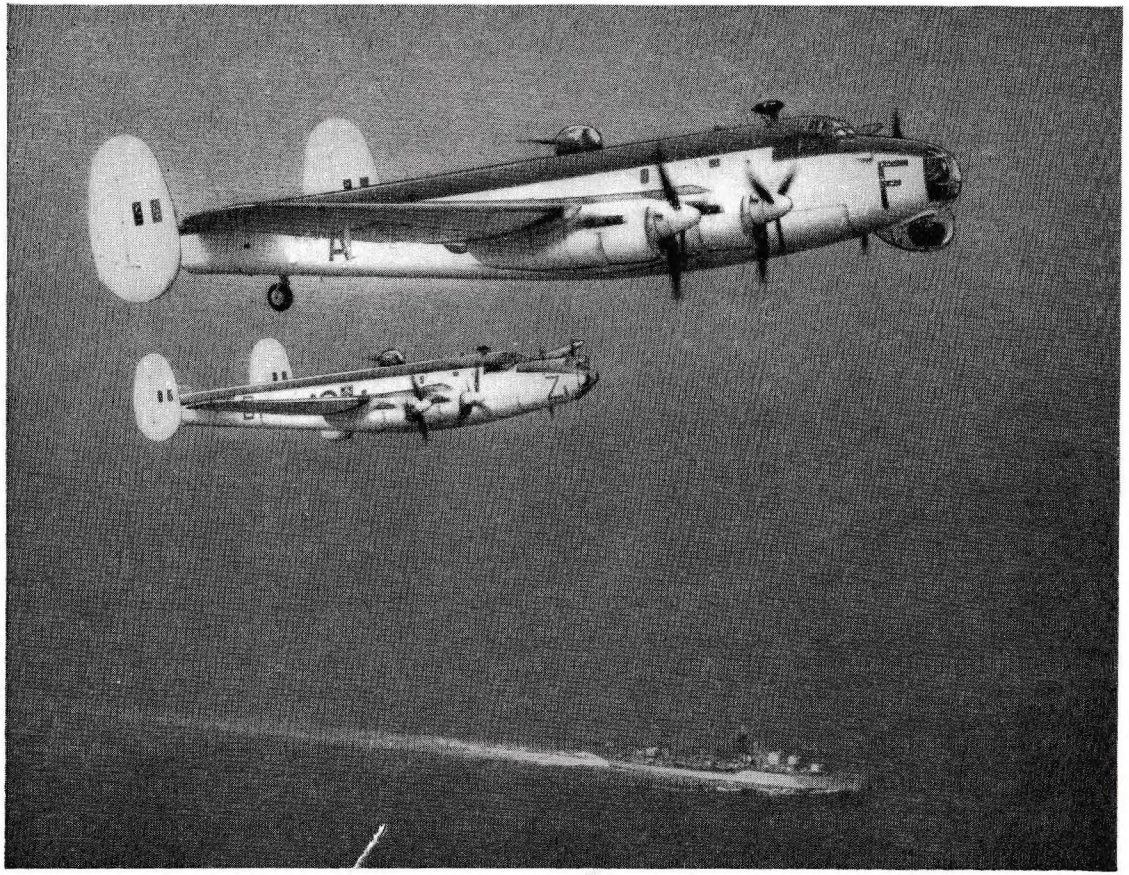
79. Midget submarines are designed for underwater attacks on ships in defended harbours. They are armed with a torpedo and limpet mines. Their endurance is very limited and they therefore require to be towed or carried to the vicinity of their target area.

80. SHORE-BASED MARITIME AIRCRAFT. The principal roles of shore-based aircraft in maritime operations are surface and A/S scouting, and strikes against detected submarines.

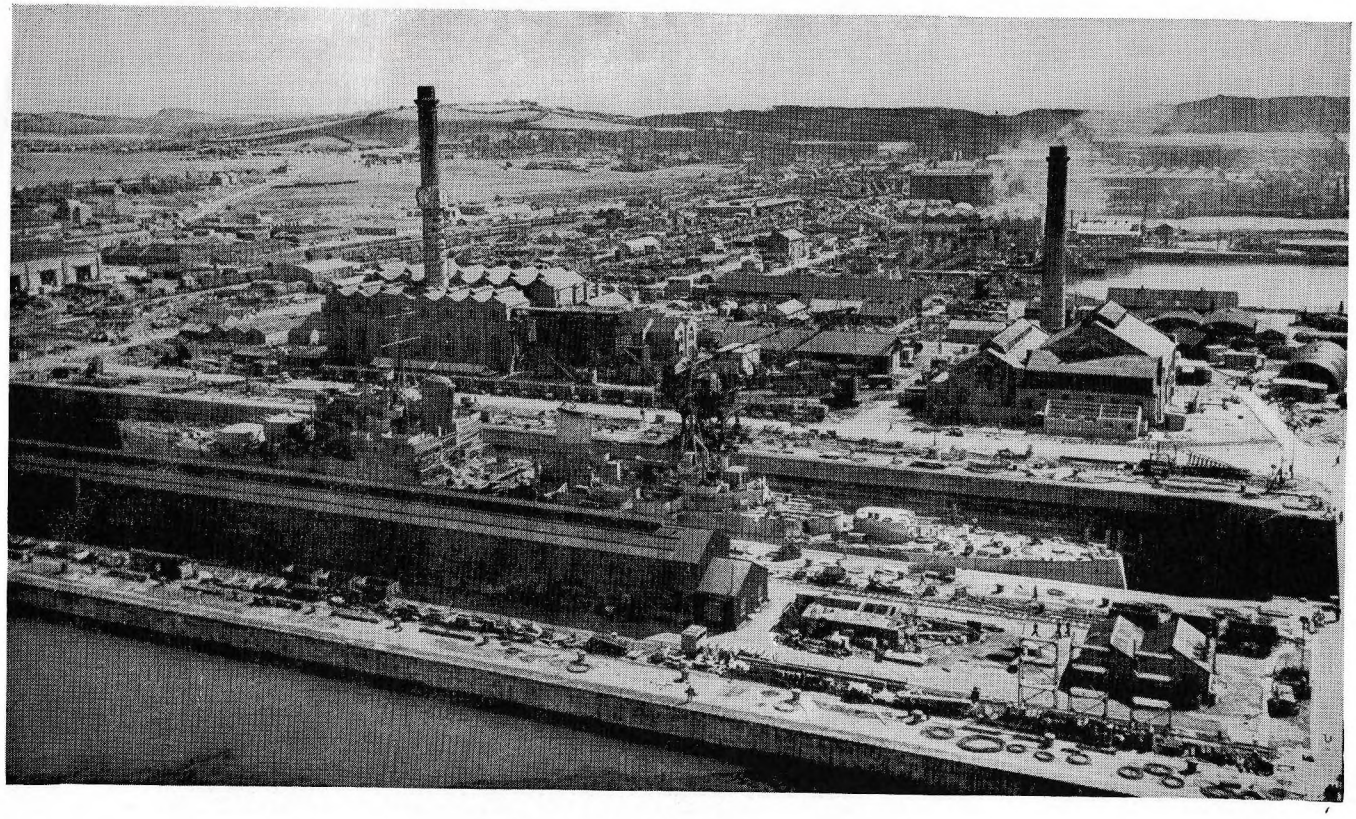
* In February, 1958, the Admiralty decided to abandon the use of fixed-wing A/S aircraf in the Royal Navy.



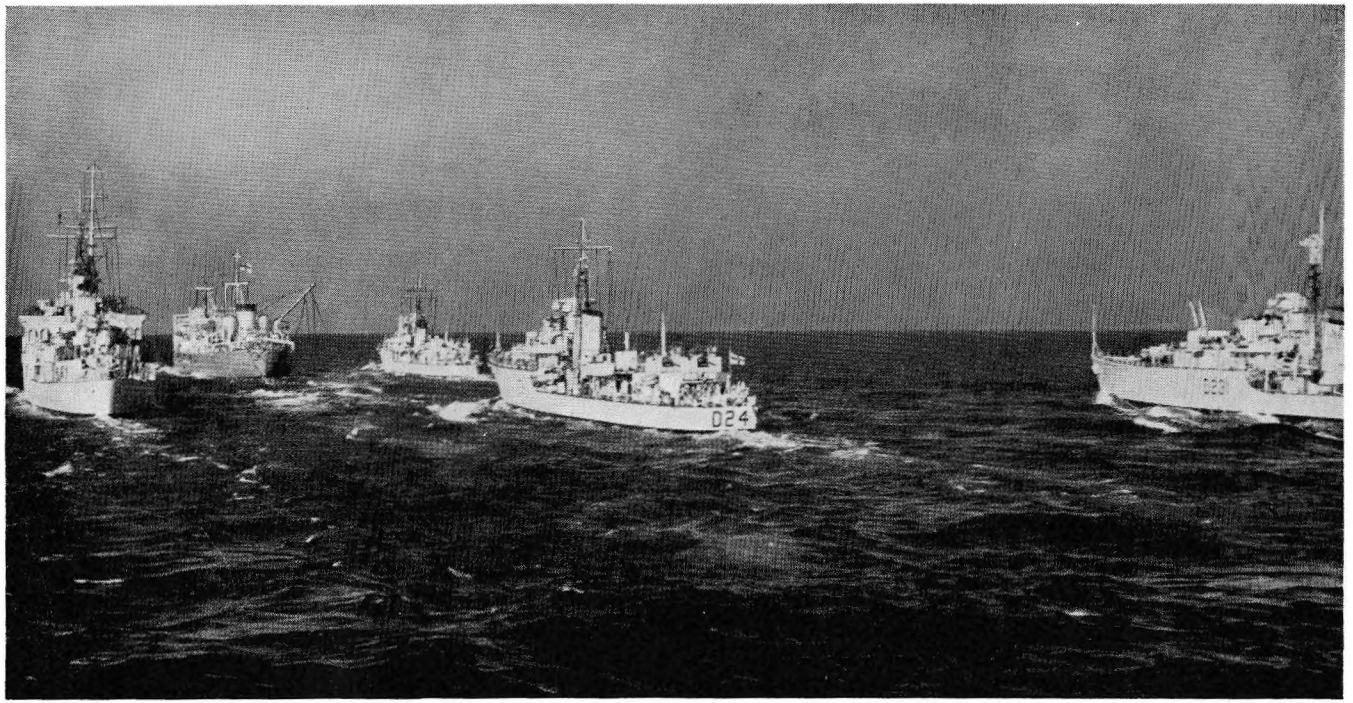
22. Ocean Minesweepers moving to take up formation



23. SHACKLETON AIRCRAFT OF COASTAL COMMAND, R.A.F.



24. A MAIN NAVAL BASE



25. Underway replenishment

The great range and endurance of aircraft designed for these roles enable them to operate over very wide areas, and they fulfil a most valuable function in providing A/S escort and support to naval forces and convoys.

81. Other maritime roles assigned to shore-based aircraft are :—

(*a*) strikes by light bombers against ships;

(*b*) minelaying in the approaches to enemy ports and bases;

(*c*) air defence of shipping in coastal waters;

(*d*) defence of shipping in coastal waters against attacks by light surface forces;

(*e*) reconnaissance of enemy harbours and bases.

82. DESTROYERS. The primary role of destroyers is to provide A/S and A.A. escort for aircraft carriers. They are also able to carry out torpedo and gun attacks on ships, but, since there are likely to be fewer opportunities for surface action, this role is of decreasing importance, and future destroyers are unlikely to be fitted with anti-ship torpedoes.

Destroyers may also be employed on escort and close support for convoys, but in view of their limited endurance they are not wholly suitable for this role.

83. The principal characteristics of destroyers are:—

(*a*) high speed and manoeuvrability,

(*b*) good sea-keeping qualities,

(*c*) dual-purpose guns,

(*d*) A/S armament and equipment, and

(*e*) torpedo armament for anti-ship action.

84. FRIGATES. Frigates are more specialised ships than destroyers and, consequently, are less expensive to build; they do not have a torpedo armament. They are usually slower than destroyers but are better equipped for A/S operations.

85. There are four main types of frigates:—

Anti-Submarine Frigates, which are equipped with the latest types of sonar; their main armament consists of A/S mortars. Some classes also have a limited A.A. capability.

Anti-Aircraft Frigates, which are equipped with air warning and air gunnery radar; their main armament consists of A.A. guns. They are also equipped for A/S operations.

Aircraft Direction Frigates, which are equipped with long range air warning radar and an Action Information Organisation capable of directing fighters. They have some A/S and A.A. capability.

General Purpose Frigates, which are equipped for both anti-submarine and anti-aircraft operations. They have limited air warning radar, but cannot direct fighters.

All guns in frigates are dual-purpose.

86. The basic requirements in the design of each type of frigate are:—

(*a*) speed equivalent or superior to that of the force being escorted or supported;

(*b*) good endurance and sea-keeping qualities.

The technical complement of frigates is not sufficient to carry out self-maintenance of the machinery and armament, and it is therefore desirable that these ships should, whenever practicable, have access to base or depot ship facilities for routine maintenance.

87. Cruisers. The roles for which cruisers were originally designed have largely been taken over by aircraft, and, in consequence, the importance of cruisers in maritime warfare has declined. Their size makes them vulnerable to submarine and air attack, and the limited capacity of a conventional gun armament makes them little more effective than destroyers, except in bombardment.

While cruisers are still in service, they would probably, in a global war, be employed in the following roles:—

(*a*) As radar pickets for carrier groups, or to contribute to the A.A. gun defence of the carrier group against low-flying aircraft.

(*b*) Searches and patrols, in co-operation with aircraft, for enemy commerce raiders.

(*c*) A.A. escort of convoys.

(*d*) Escort and close support of convoys against surface attack.

(*e*) Gunfire support for amphibious operations.

88. Whilst their roles in a global war are likely to be restricted to those mentioned above, cruisers are very valuable units in limited and cold war.

In limited war they can provide support for amphibious operations and can deal with any threat by light surface forces. Their capability to maintain themselves and to provide some logistic support to smaller vessels is particularly useful in operations remote from bases. They can also provide facilities for a Force Commander to exercise command.

In cold war they can rapidly provide a show of strength in troubled areas and can carry landing parties and supplies for use in dealing with civil disturbances and natural disasters.

89. Amphibious Warfare Craft. The "Commando Carrier", which has already been mentioned, is the most recent development in ships for amphibious operations.

Other types of specialised amphibious warfare craft built during the Second World War remain in service in order to keep alive techniques and to enable small amphibious operations to be mounted in a limited war.

Fast minelayers can be used to transport troops taking part in amphibious operations.

90. Coastal Forces. Coastal Forces consist of very fast small craft armed with torpedoes or guns. They are designed for strike operations against ships in confined waters, such as the Baltic and the North Sea, and for protecting coastal convoys against attack by enemy light surface forces. They can also lay mines.

The high speed of Coastal Forces craft enables them to make good use of surprise in both attack and defence, particularly at night, but this advantage will be offset in strikes against ships equipped with radar. Their endurance is low and they are unable to operate effectively in rough weather.

91. Minelaying Forces. Forces capable of minelaying include:—

(*a*) Fast minelayers. These may have been designed as such, or may be destroyer conversions.

(*b*) Small minelayers for coastal operations.

(*c*) Shore-based aircraft.

(*d*) Carrier aircraft.

(*e*) Submarines.

(*f*) Coastal forces craft.

92. The development of the air and submarine threats has greatly increased the hazards to surface ships carrying out minelaying in the vicinity of an enemy's coast. Fast minelayers may, however, carry out such operations when the scale of opposition permits.

Defensive minefields in the vicinity of friendly coasts and bases may be laid by fast or small minelayers, or by converted merchant ships.

93. MINE COUNTERMEASURES FORCES. These consist of:—

(*a*) Ocean Minesweepers for long-range mine clearance operations and for sweeping ahead of strike and amphibious warfare forces.

(*b*) Coastal Minesweepers for sweeping along coastal shipping routes.

(*c*) Inshore Minesweepers for working in the approach channels to ports and bases.

(*d*) Mine Clearance Diving Teams for dealing with unsweepable mines in shallow waters.

Types of Modern Naval Weapons and Equipment

94. A number of important developments have taken place in the field of weapons and equipment. These include:—

Guns. 3-inch, 4·5-inch and 6-inch dual purpose guns, mounted in twin turrets, with a very high rate of fire, automatically controlled by gunnery radar systems.

Torpedoes. (*a*) Active Homing Torpedoes which have a built-in sonar equipment and home on the echoes it provides.

(*b*) Passive Homing Torpedoes which home on the hydrophone effect from the target's propellers.

(*c*) Pattern Running Torpedoes which run to a given range and then describe a pre-set pattern in order to overcome evasive action by the target, or aiming errors when firing from long range.

A/S Weapons. (*a*) Omni-directional A/S mortars controlled directly by sonar systems.

(*b*) A/S Active and Passive Homing Torpedoes.

A/S Equipment. Sonar capable of detecting submarines at much greater ranges.

Aircraft Weapons. (*a*) Kiloton nuclear bombs for use against land or ship targets.

(*b*) A/S Active and Passive Homing Torpedoes.

Electronic Equipment. Great improvements have been made in the range and definition of all types of warning and control radars.

In addition, electronic warfare equipments are being developed. Broadly, the purpose of these is to obtain information from an enemy's electronic emissions, or to prevent him from obtaining full value from his own electronic equipment. Electronic warfare equipment is also being developed for defence against electronically-controlled guided weapons.

Considerable use is also being made of electronics for navigational purposes, e.g. " Consol " and " Decca ".

FUTURE DEVELOPMENTS IN BRITISH MARITIME FORCES

95. Great technical advances are being made at the present time (1957) and are likely to have far-reaching effects on the shape of future maritime forces.

However, the very high cost of nuclear and thermo-nuclear weapons in relation to the limited financial and material resources of the United Kingdom makes it

impossible for this country to take full advantage of all these advances in the development of her maritime forces. This will inevitably prejudice their standing in relation to the forces of the U.S.A. and the Soviet Union.

96. In these circumstances, the development of British maritime forces is likely to be towards a small number of well-equipped ships and aircraft, with particular emphasis on A/S forces.

This reduction in the size of British maritime forces must affect, to some extent, their ability to carry out the roles mentioned in paragraph 67.

97. The principal technical advances, and their possible effects, are discussed briefly in the following paragraphs.

Methods of Propulsion

98. Gas Turbines. Gas turbines will be fitted in some ships in addition to steam turbines. The former will provide the additional power to obtain full speed with the least weight penalty, while the latter will provide high endurance at cruising speeds.

Gas turbines will also enable ships to get under way very quickly; this will be a great advantage, particularly in areas where an air threat is present.

99. Nuclear Propulsion. The use of nuclear reactors as a heat source for steam, or possibly gas, turbines will give ships vastly increased endurance and hence the ability to steam at high speeds for prolonged periods. In submarines, it will give both high sustained underwater speed and the ability to remain submerged for very long periods.

Materials used in Construction

100. Steel is likely to remain the basic material for ship construction, but increasing use may be made of light alloys and plastics in order to save weight and to reduce corrosion.

Weapons and Equipment

101. Guided Weapons. Guided missiles are propelled by various types of rocket motors and may either contain their own target-seeking equipment or may be directed to their target by a parent ship or aircraft. Both types need to be launched on approximately the correct course, which is determined by the parent ship or aircraft, normally by radar.

102. Guided weapons may be classified as follows:—

Air-to-Air. For use by fighters against enemy aircraft.

Air-to-Surface. For use by strike aircraft against ships or land targets.

Surface-to-Air. For use by ships against attacking aircraft. Types now under development will replace guns for close and medium defence, and future types with greater range may well ultimately replace manned fighters.

Surface-to-Surface. For use by ships against ship and land targets. When sufficiently developed, they may replace guns and short-range strike aircraft.

103. Ballistic Missiles. These are usually very long-range rockets, guided by radar and capable of carrying a heavy explosive (either nuclear or H.E.) head. The distinction between guided missiles and ballistic missiles is that the former are propelled throughout the whole of their flight, whereas the latter attain their

maximum speed soon after launching and then reach their target by a combination of inertia, gravity and pre-set internal control. Their application to maritime warfare may possibly take the form of a missile which can be launched against land targets from a surfaced or submerged submarine at a distance of several hundred miles from an enemy coast.

104. Nuclear Explosives. The only maritime weapons at present capable of being used with nuclear explosive are the aircraft bomb and depth-charges. It is likely, however, that nuclear warheads will be developed for torpedoes, ballistic missiles and all guided weapons. Nuclear shells for naval guns are at present a low-priority development.

105. Electronic Equipments. Future developments in radar warning, control and jamming systems, coupled with the increased range of weapons, are likely to produce a still greater increase in the size of the tactical arena in maritime warfare.

Future Warships and Maritime Aircraft

106. Naval Aircraft. During the next few years, naval fighters will be armed with guided weapons and will have a limited strike capability.

Strike aircraft will be able to deliver nuclear bombs in addition to conventional weapons.

107. Guided Missile Ships. Guided Missile Ships of medium tonnage are under construction; these will be armed with surface-to-air guided weapons for air defence.

Future ships of larger tonnage may carry surface-to-surface and long-range surface-to-air guided weapons. It is possible that such ships may ultimately replace aircraft-carriers as the main surface strike units.

108. Submarines. Submarines may be armed with ballistic missiles for strikes against shore targets, guided weapons for use against ships and homing torpedoes for use against other submarines.

Nuclear-propelled submarines will be able to operate continuously submerged in all weathers at speeds equivalent to the maximum speed of ships in good weather.

Future types of submarines will have far greater diving depths. The combination of nuclear propulsion and this greater freedom in depth will provide so vast an improvement in the performance and capabilities of the submarine as to revolutionise under-surface warfare.

CHAPTER 21

Naval Administration and Logistics

"Whatever other result may be achieved, naval administration has failed unless it provides to the Nation an efficient fighting body, directed by well-trained men, animated by a strong military spirit."

Mahan: *Naval Administration and Warfare* (1903)

1. " Administration " is defined as " The management of all phases of military operations not directly involved in tactics and strategy."

It can also mean " The internal management of units ", but it is not used in this sense in the Royal Navy.

2. The word " Logistic " is derived from the Greek *logistikos*—" to calculate ", and for many years it has appeared in English dictionaries as " skilled in calculating " or " pertaining to reckoning ". In its present-day sense, the word " logistics " seems first to have been used in the United States Navy in the First World War, and, resulting from the close Anglo-American associations of the Second World War, the word was adopted into British service vocabulary. " Logistics " is now defined as " The science of planning and carrying out the movement and maintenance of forces ".

3. Thus, " Administration " includes most of logistics as well as such matters as welfare and discipline. However, it is not always easy to draw a firm line between logistics and the other aspects of administration; for example, the supply of beer is a logistic problem, but it also affects both welfare and discipline.

4. The logistic problems of the three Services are not truly comparable; the term " logistics " is rarely used in either the Army or the R.A.F., both Services preferring the broader term " administration ". This may be because, in those Services, the problems of supply and maintenance are followed through until they become a day-to-day matter affecting each individual man. In the Navy these problems are, in general, the more impersonal ones of the supply and maintenance of ships, and are thus more remote from the individual.

In Joint Service matters, the word " administration " is normally used, examples being the " Principal Administrative Officers' Committee " (consisting of the Fourth Sea Lord, the Quarter-Master-General and the Air Member for Supply) and the " Joint Administrative Planning Staff "; both these bodies are, in fact, concerned almost entirely with " logistics."

The Mechanics of Logistics

5. From the definition of logistics given in paragraph 2, it follows that there are three phases to any logistic task or problem:—

Assessing the requirements for supplies and services;
Procuring the supplies and servicing facilities; and
Distributing the supplies and providing the services.

6. *Assessing the requirements* involves planning, which is discussed in paragraphs 7 to 9.

Procurement is primarily a matter for the organisation described in paragraphs 10 and 11. During procurement, the planned requirements must be reconciled with the goods and services actually available.

Distribution is basically a matter of transport and storage. In war, this involves not only the control and defence of shipping, but also adequate inland transport systems, loading and unloading facilities, warehouses and stevedoring labour. Air transport is playing an increasingly important part in distribution but it cannot yet compete with the task of completely supplying and maintaining forces overseas. Other vital elements in the problems of distribution and of providing services are Bases and Afloat Support, which are discussed further in the next chapter.

Logistic Planning

7. At first sight, it might appear that logistic problems can be solved by ordering plenty of everything and then making a generous distribution all round. It is not, however, as easy as this.

The total requirements of the Armed Forces and of each part of the National War Machine will inevitably exceed the United Kingdom's available resources. Each requirement must therefore be assessed carefully, and the amount finally demanded must not exceed what is reasonably necessary for the particular purpose. Otherwise, demands would be greatly in excess of what can be made available and a breakdown in supply arrangements would be threatened.

Moreover, transport and storage are limited, and it is no use getting more supplies than can be taken to, and kept at, the place where they are needed by the time they are needed.

These considerations form the basis of logistic planning.

8. The aim of logistic planning is the provision of adequate quantities of all items required for the use and support of operational forces, and also the means to have these items immediately available where and when they are required.

In order to do this, logistic planning staffs must have:—

(*a*) knowledge of what constitutes " the proper items," i.e., they must procure items which have been proved by experience to be the most efficient in the winning of battles;

(*b*) sufficient knowledge of operational plans to ensure the delivery of the right material in the right quantities at the right place and at the right time.

9. In short, close co-operation between operational and logistic planning staffs is essential to ensure that arrangements for supply and maintenance, which often involve long-term projects, will be adequate to meet operational needs.

Conversely, this co-operation will ensure that no operational plan which is logistically unsound is adopted.

Logistic Organisation in the Royal Navy

10. Modern war demands that the total resources of the nation and its allies should be marshalled and used to the best effect. Strategy must take account of the problems of supply and maintenance; the planning of logistic support must therefore start at the same level as the planning of grand strategy. The Defence Committee and the committees working under it not only decide strategy but also the apportionment of resources to defence; the Minister of Defence is responsible for co-ordinating the needs of the three Services.

The Ministry of Supply is the Government Department responsible for procuring supplies for the Services, except that its responsibility for the Navy is limited to aircraft and their associated weapons and equipment, guided weapons, and certain " common user " items; all other naval requirements are obtained by the Admiralty direct from Industry.

11. Within the Admiralty, the organisation follows broadly the same lines as the national organisation at a higher level. The Controller and his Departments are responsible for repair and maintenance,* and the Fourth Sea Lord and his Departments for supplies and transport. Nearly all Divisions, Departments and Branches are, however, connected in some way with logistics.

Logistic planning is the function of the Director of Administrative Planning, who is essentially the co-ordinator and the link between the Naval Staff, who prepare plans, and the Branches and Departments who execute those plans.

12. The Staffs of Commanders-in-Chief and Flag Officers are generally divided into operational and administrative sections, the latter being responsible for logistic matters. There must be close co-ordination between both sections.

Logistics and Morale

13. Logistics, welfare and discipline are inter-dependent. It is clearly essential, especially in modern war, to have the proper material at the right time and place; but it is impossible to fight at all without the will to do so. The will to fight depends on the morale of those who wield the weapons. Morale, which can be fostered by many means, depends primarily upon confidence—the confidence of the individual in himself, his fellows, and in the " management ". Of these, the last is perhaps the most important, since self and mutual confidence can be inspired and promoted by good leadership. The success or failure of logistic and other administrative arrangements is the most obvious indication, to the lower deck, of the efficiency of the management; the success of these arrangements is therefore most important in the maintenance of morale.

14. A good commander will do his best to ensure that his administrative arrangements are satisfactory, but his logistic support may fail through no fault of his own. Leadership can, for a limited time, compensate for poor logistic support; but morale will suffer if the period is prolonged, and the commander will be left with a force which lacks both the resources and the will to fight. Any commander who has to concentrate on maintaining the morale of his own force cannot give sufficient attention to fighting the enemy.

15. To sum up, good logistics, welfare and discipline make it possible for a force to give of its best. The commander has then to translate this possibility into an accomplished fact.

16. The Security Aspect. Logistic planning often requires arrangements to be put in hand for concentrations of materials well in advance of any movement of forces in connection with an operation. The semi-initiated may make deductions from these arrangements and discuss them in public, thinking, quite erroneously, that their own deductions need not be regarded as secret. This may well jeopardise the secrecy of the operation and must be guarded against.

* Responsibility for maintenance in the Fleet is currently delegated to the Fourth Sea Lord, *vide* Chapter 8, para. 7(*g*).

CHAPTER 22

Naval Bases and Afloat Support

"The service between the bases and the mobile force, between the ports and the fleets, is mutual."

Mahan

1. It was stated in the previous chapter that bases and afloat support are vital elements in the third phase of logistic support for operational forces, that is, in the distribution of supplies and the provision of services.

This chapter discusses the functions of bases and afloat support, the different types of each and the main factors involved in their selection and use.

Functions of Bases

2. Naval forces require bases for the following purposes:—

(*a*) To carry out repairs to, and maintenance of, hull, machinery, weapons and equipment. This may vary from a complete refit to minor repairs and routine maintenance.

(*b*) To replenish with fuel, provisions, stores and ammunition.

(*c*) To give rest and recreation to ships' companies, and to carry out training which cannot be done at sea.

(*d*) For aircraft-carriers only, to exchange aircraft and squadron personnel.

Functions of Afloat Support

3. Afloat support is needed to provide essential supplies and maintenance and repair facilities in areas where they are not available on shore, and also to replenish warships at sea during operational periods.

Types of Bases

4. Bases may be classified under three headings:—Support Areas, Main Naval Bases, and Advanced Naval Bases.

5. Support Areas. A support area contains concentrations of manpower, industrial potential, food and materials. It is capable of providing the facilities necessary to support all types of ships, and includes dockyards, storage, personnel depots and shore air facilities. It must also provide the stores, equipment and men needed to develop other bases and afloat support.

The United Kingdom and Australia are examples of Support Areas.

6. Each theatre of operations depends upon a particular support area to provide the men and supplies needed for the forces in the theatre.

Thus, during the Second World War, British maritime forces in the Mediterranean were supplied and reinforced from the United Kingdom; those in the Pacific from Australia.

7. Main Naval Bases. A Main Naval Base should be able to support maritime forces in the operational area for long periods without their having to return to the Support Area.

The principal requirements for a Main Naval Base are:—

(*a*) It should be situated as near as practicable to the operational area.

(*b*) It should be well-defended against sea and air attack, and there should be sufficient room to disperse base installations in order to minimise damage.

(*c*) There must be sufficient harbour space and depth of water for all ships likely to use the base at one time, and the harbour must have adequate protection from the weather.

(*d*) It must have good docking, repair and maintenance facilities; adequate stocks of all kinds of stores, provisions and ammunition; and facilities for training and recreation of personnel.

(*e*) There must be existing airfields and aircraft repair yards, and facilities for transporting damaged aircraft from ship to shore.

(*f*) Suitable areas for exercising ships, submarines and aircraft should be available within a short distance.

(*g*) There should be room for the base facilities to expand in order to meet new requirements.

(*h*) An adequate number of servicing craft (e.g., lighters, store carriers).

8. Main Naval Bases are very costly to build and maintain, and take a long time to create. The provision of such bases in different parts of the world is necessary to enable maritime forces to meet the United Kingdom's defence commitments. Without bases, these forces would have to return more frequently to a Support Area.

9. Main Naval Bases must be situated in British territory or in the territory of a country which is likely to remain friendly. Strategy will sometimes require that the main bases of all three Services be situated in the same place, as, for example, at Singapore.

A Main Naval Base is often a suitable centre for a Maritime Headquarters, from which, in wartime, the Naval and Air Commanders exercise control over maritime operations in the area.

10. Advanced Naval Bases. An Advanced Naval Base provides facilities for replenishment and minor repairs, so that ships can continue operations without the delay involved in returning to a Main Naval Base. It must therefore be situated in, or as near as practicable to, the operational area.

11. The facilities available at an Advanced Naval Base will vary considerably, depending on the classes of ship which it is required to support. These facilities may consist of existing commercial installations with naval backing, or mobile naval facilities; the latter may be either ashore and or afloat.

12. Advanced Naval Bases are often of a temporary nature, and are therefore unlikely to be provided with fixed defences. The maritime forces using an advanced base will usually be required to help in its defence.

Ample anchorage is important, since lack of alongside berths and mooring buoys will require swinging room for all ships. Two entrances are desirable, in order to reduce the risk of ships being immobilised by enemy minelaying.

Types of Afloat Support

13. The vulnerability of shore bases to air attack, particularly if nuclear weapons are used, makes it necessary for considerable reliance to be placed in war on

Afloat Support; this cannot, however, wholly replace shore bases and it is more costly to acquire and maintain than are equivalent facilities on shore.

14. Afloat Support can be classified under two headings; Harbour Afloat Support, and Underway Replenishment.

15. HARBOUR AFLOAT SUPPORT. This consists of ships which are specially designed so as to be able to provide at an Advanced Naval Base facilities which are not available on shore. Such ships may be of the following types:—

Tankers, Issuing Ships for Stores, Provision and Ammunition;
Repair Ships; Aircraft Repair Ships; Accommodation Ships;
Hospital Ships; Amenity Ships.

These ships need have only sufficient speed to be able to proceed in a convoy. Servicing craft are also needed for harbour transport work.

16. Periodical replenishment of Issuing Ships at an Advanced Base can most conveniently be arranged by relieving the empty ship by a full one.

17. UNDERWAY REPLENISHMENT. To enable ships to be operated more economically by remaining in the operational area for longer periods than would otherwise be possible, and also to avoid the risk of their being located and attacked in harbour, it is necessary that they should be able to replenish with fuel, stores, provisions and ammunition while at sea.

18. For Carrier Forces, this need can be met by Underway Replenishment Groups, consisting of tankers and fleet replenishment ships. The main requirements of a Carrier Force are fuel, and also certain bulky stores, such as air ammunition and drop tanks, sufficient supplies of which cannot be stowed in aircraft-carriers to last throughout a full operational period.

Ferry Aircraft-Carriers may also be required to replace losses of aircraft; such carriers should be capable of operating aircraft in order to transfer them at sea to the operational aircraft-carriers.

All ships in an Underway Replenishment Group must have sufficiently high speed in order to be able to work with a Carrier Force.

19. While its stocks last, an Underway Replenishment Group will generally remain at sea close to the operational area, making rendezvous with Carrier Forces as required. When its stocks are exhausted, it will need to return to a Main or Advanced Naval Base for further supplies.

20. MAINTENANCE OF AFLOAT SUPPORT SHIPS. Afloat Support Ships, both Harbour and Underway, require periodical maintenance, repair and personnel replacement in order to keep at full efficiency. They must therefore have access to a Main Base for these purposes, and this must be taken into account in operational planning.

PART V—THE PERSONAL ELEMENT

CHAPTER 23

Leadership—Morale—Training—Discipline

> "Will you tell me Master Shallow how to choose a man? Care I for the limbs, the thews, the stature, bulk and big assemblance of a man? Give me the spirit, Master Shallow."
>
> Falstaff, in Shakespeare: *King Henry IV, Part* 2

Introduction—The Value of Reading

1. Morale is the general spirit or state of mind of a group of people as reflected by their behaviour under all conditions. The morale of the Armed Services is the most important single factor in war. This fact was stressed in the first chapter of this book, and has been the recurrent theme throughout it.

2. Morale, training and discipline are closely inter-related, but all depend in the first instance on sound and effective LEADERSHIP.

3. It is the duty of every officer to develop to the utmost his power of leadership, for it is this power which places an officer above his men. Some are born leaders to whom the art comes naturally, but such men have always been few and they stand out in the pages of history. The average officer will have some instinctive aptitude for leadership, and this should be developed by constant training and experience, and by study of the methods of successful leaders.

4. The subjects which head this chapter are profound and complex. This chapter can do no more than give an outline of what they mean. There can be no concise text-book to teach them. Many books, articles, lectures and papers have been, and will continue to be, written about them; all find something new to say, or a new way of saying the same things. Such writings by successful leaders, who have studied the art of command at all levels, should be read and read again.

5. Leadership is essentially individualistic; no two men can exercise their power of leadership in the same way. It is fatal to try to copy blindly the idiosyncrasies of a great leader; but by studying his methods, the principles which guided him can be deduced, and each officer should apply these principles to suit his own individual character.

6. In a series of lectures entitled "Generals and Generalship", the late Field-Marshal Lord Wavell said:—

> "In the lecture hall of a French infantry school which I once attended was written the following from Ardant du Picq;
>
> 'The man is the first weapon of battle; let us then study the soldier in battle, for it is he who brings reality to it. Only study of the past can give us a sense of reality, and show us how the soldier will fight in the future.'
>
> When you study military history don't read outlines on strategy or the principles of war. Read biographies, memoirs, historical novels. Get at the flesh and blood of it, not the skeleton. To learn that Napoleon won the campaign of 1796 by manoeuvre on interior lines, or some such phrase, is of little value.

If you can discover how a young unknown man inspired a ragged, mutinous, half-starved army and made it fight, how he gave it the energy and momentum to march and fight as it did, how he dominated and controlled generals older and more experienced than himself, then you will have learnt something. Napoleon did not gain the position he did so much by a study of rules and strategy as by a profound knowledge of human nature in war."

It is worthy of note that there have been few, if any, successful military leaders who have not been well read in military history.

LEADERSHIP

What Leadership Means

7. Field-Marshal Lord Montgomery has defined leadership as:—

" The will to dominate, together with the character which inspires confidence."

Thus, broadly, the three requirements for successful leadership are:—

A strong personality.

The ability to gain the confidence of subordinates, and consequently to influence and inspire them to give of their best; this implies an interest in people as human beings.

The ability to justify the confidence so gained, by making the best use of the resultant enthusiastic service.

The third requirement is not only a matter of professional knowledge, judgment and width of vision, or, in other words, " knowing one's job ". It needs also mental robustness and courage to stick to the selected aim; it has been said that no battle was ever lost until the Commander thought it so.

Qualities for Leadership

8. The establishment of confidence requires " natural " leadership, so called because most of its attributes cannot be acquired but must be developed through the cultivation of characteristics inherent in the individual. The development of natural qualities involves the study of the natural qualities of others and must start with self-discipline; it is a continuous process throughout training and daily life. It is a prime responsibility of all leaders to promote this process amongst their subordinates by:—

Precept and example;
Advice, encouragement and admonishment;
Giving subordinate leaders every opportunity for leading.

9. An outstanding characteristic of all great leaders is their refusal to be dominated by circumstances. While not challenging the inevitable, they use the events around them to achieve their own ends, rather than modify their ends to keep pace with the tide of events. Personal qualities which are invariably present in great leaders are:—

The ability to see clearly the few essentials that are important to success.

Firmness and speed in decision; the art of rapid decision is largely acquired by foresight, by thinking out during quiet periods what action should be taken if different circumstances arise.

Calmness in crisis; the courage to withstand mental stress and strain, and the refusal to be distracted by bad tidings.

Boldness; a good leader must be successful to retain the confidence of his men, and success will not come through faint-heartedness.

A readiness to accept and discharge responsibility at all times; the mere acceptance of responsibility without the determination to fulfil it by executive action is useless.

10. The qualities listed above are to some extent innate, but all are capable of considerable development, mainly through confidence in oneself born of professional competence, which can be acquired by application. Every great leader has always convinced his men that he has their interests at heart by one or other of the following means, or by a mixture of the two:—

Wide and sympathetic understanding of human nature, supported by a sense of humour, or,

Meticulous care coupled with rigid impartiality in dealing with their affairs.

Conservation of Energy

11. Besides creating the will to fight and then directing the resultant effort wisely, every leader must know how hard to drive his force. At times, consideration for the future must be overshadowed by current urgency, but normally a force must not be spurred or inspired beyond the limits at which both men and machines lose their power of recovery and become a total loss to the war effort. Undue mental strain often leads to physical exhaustion and undue physical strain to mental eccentricities. Full consideration must always be given to the matter of fatigue, especially among men exposed to abnormal strain (e.g., submarine and air crews).

12. The Commander must also consider his own fatigue, for it is essential that his energy, both mental and physical, should be conserved for crucial periods. The Commander must ensure that he has adequate and regular periods for rest and reflection. He must not allow himself to become immersed in matters of detail which are properly the concern of his staff; he should make his wishes known by clear and concise orders, leaving his staff to work out the details. He should also delegate as much responsibility for current affairs as is practicable to subordinate commanders; this serves the double purpose of giving the latter the experience essential for their own development, and of preserving the vital force of the leader for when it is most required.

Personal and Impersonal Leadership

13. There are two types of leadership—the personal and the impersonal. Personal leadership can be exercised by those who are in a position to exist as a personality to those whom they lead, and is the easier of the two. To the rank and file, this leadership is seen to be exercised by the man who obviously controls their day-to-day affairs and leads them in battle. Confidence in such leaders is based mainly on their personal qualities.

14. Until recent times, virtually all naval leaders could exercise personal leadership, for commanders were afloat. The Admiral shared hardships and dangers with every man in his fleet, and he was to them a recognised personality. Modern war has brought impersonal leadership to the Navy; the leader is now often remote from those he commands. This type of leadership was forced on the Army some time ago. It is more difficult to exercise than personal leadership, and thus requires more profound study; this may explain why most treatises on leadership have been written by soldiers.

15. The impersonal leader is generally visualised by the rank and file as an authority rather than as a person; he can exercise his personal qualities only

indirectly through his subordinate leaders, who must be made to feel that they have his complete trust. If he is fortunate enough to have a reputation gained in war, this will count for much, but wars are infrequent and few leaders can rely on this asset at the outset of a war. This confidence in remote leaders depends largely on their success—their success in battle and, above all, the success of their administrative arrangements which are the outward and visible signs of their efficiency.

It should be the aim of all leaders to extend their personal influence as widely as possible, and to visit the units under their command as often as they can. This is another good reason why the leader should delegate control of day-to-day matters to his subordinates, and to his staff.

Conclusion

16. An officer's first duty is to lead. The fulfilment of this duty calls for personal example in every sphere of his existence; this example, be it dress, manners, speech, instruction or conduct in battle, when allied to professional knowledge, is the most important aspect of an officer's life. Every officer can do much to train himself for leadership by—

Firstly—Maintaining his own self-respect and fostering that of his subordinates;
Secondly—Learning his job and thereby obtaining confidence;
Thirdly—Accepting responsibility and discharging it by the application of the power of command.

MORALE

How to Build Morale

17. However he may be endowed physically and mentally, the activities of an individual are mainly determined by the spirit which animates or inspires him. The effects of this spirit, or state of mind, are much more marked in a group where individuals, reacting upon each other, produce a cumulative effect, known as crowd influence, which can result in unexpected heights of courage and sustained effort, or in depths of panic and apathy quite unworthy of the worst individual in the group. The sentiment of an accidental crowd is notoriously fickle and therefore useless in a fighting force. In building up morale it is necessary, even though the quality required is a collective one, to start with the individual and thereby stabilize the elements of the group. A group of men, individually stabilized by the inculcation of basic moral qualities and collectively influenced by environment and subordinate leadership, will develop a collective spirit which in turn will improve the individual and hence react favourably once more upon the morale of the group. It is the task of the leader to ensure that the necessary conditions exist for creating this interaction in the first place, and subsequently to maintain and foster the resultant spirit whilst using it to the best advantage.

Factors contributing to Morale

18. There are many factors which contribute towards high morale, and some of these factors will vary with the circumstances. There is insufficient space in this chapter to carry out a complete analysis of the subject but much help can be obtained by reading some of the many books and articles written on Leadership and Morale. The factors are fundamentally the same for each Service. Every successful leader will have his individual approach to the problem of establishing a high morale.

19. A state of physical and mental well-being is fertile for the cultivation of morale, but contentment and good health are fertilizing agents only; they do not create morale, which is a self-denying mental quality that drives men forward against their own instincts (e.g., fear) and their own desires (e.g., rest and comfort). Whilst a high morale is based partly on discipline and self-respect, the quality essential for its creation is confidence:—

(*a*) Of the individual in himself; this is acquired through training, just treatment and professional skill which combine to build-up self-respect.

(*b*) Of individuals in each other; activities, rivalries and hardships shared in the proper environment enable mutual respect and comradeship to develop from self-respect.

(*c*) In the cause for which men are working or fighting; this may arise from ideal motives or from the idea that success is probable and profitable.

(*d*) In their leaders; this is the most important aspect of confidence since, once established, it is within the power of the leader to develop all the other aspects.

(*e*) In the material and equipment to be used; a high morale will result in the best use of poor material, but in this machine age high morale will not be maintained for long in the face of obvious material failure or the supply of inadequate equipment.

(*f*) That the interests and well-being of their families will be safeguarded while they are necessarily absent from home.

Morale of the Leader

20. A commander must watch carefully his own morale, for if he loses heart the battle will be lost. A well-known author once wrote:

> " Down the streets of Portsmouth, more than a hundred years ago, walked a sailor with one arm, one eye, a persistent state of nerve and unable to tread a ship's deck without being seasick. Indeed, he would probably have been in a home for incurables—were not his name Horatio Nelson. The man's spirit drove the flesh."*

Subversive Propaganda

21. An important factor to be reckoned with in the preservation of high morale is the effect of subversive propaganda. There is nothing new in this threat. Nations at war have always sought to destroy the fighting spirit of opponents by trying to undermine confidence in their leaders, by suggesting that they have nothing to gain by fighting, or by various forms of " frightfulness " designed to inspire terror.

What is new in this type of warfare, however, is the development in recent years of methods, such as radio broadcasting and aerial leaflets, for the widespread dissemination of propaganda. Another recent development is the creation of disloyal elements (" Fifth-Columns ") whose main task is to spread and reinforce subversive propaganda.

The most effective form of propaganda is that which contains half-truths and is illustrated by unrepresentative examples. It is dangerous to ignore this; there will always be some weaker spirits who are ready to believe it, and they will, in time, infect their fellows. The best counter is a balanced presentation of the whole truth, supplemented by refutation of particular allegations or promises.

* Stanley Russell, quoted by Norman Copeland in his book *Psychology and the Soldier.*

Constant attention to subversive propaganda is essential, because once morale has been destroyed, it cannot easily be restored. In this, as in so many other things, prevention is better than cure.

TRAINING

22. The aim in Naval Training is to produce a fighting force of men with both the will and the ability to give of their best in war. The two aspects of will and ability are interdependent and must proceed hand in hand, though particular emphasis may be placed on either one or the other during various stages of training.

23. The main phases of Naval Training are:—

The Individual. Whilst the training in the Individual phase is normally imparted collectively, its purpose is to endow the individual with the necessary moral qualities and skill to take his place in an organized and disciplined community.

The Professional. The Professional phase, which depends largely upon environment, is continuous throughout Naval life. In participating in the activities of a disciplined community the individual learns to apply his qualities and skill to his daily tasks and acquires professional ability. Such ability is progressively developed by experience and specialized instruction until the individual is equipped to play a leading part in any similar community.

The Unit. The third phase is concerned, in the first place, with the operating and fighting efficiency of units. Subsequently, with formations or groups of units, it leads up to the strategic disposition of maritime forces. Activities in this phase play an important part in the " professional " phase for both officers and men.

Individual Phase

24. The Individual phase is divided into Basic Training and Technical Training.

Basic Training. Primary Basic Training is essentially a period of character moulding in which the instruction given must be broad and elementary with the object of developing the qualities of self-respect, loyalty, discipline, initiative, and self-reliance. These qualities are required equally by all; basic training is therefore common to all branches of the Navy. Such training is best done in Training Establishments where the surroundings are well-ordered and regular, and the man's first service contacts can be with selected officers and senior ratings who can inspire and command his respect.

Technical Training. The technical knowledge required by officers and men for the operation and maintenance of weapons and material is provided by Technical Training. This concerns mainly the Technical Schools which should, in addition, foster and develop the Basic Training.

Professional Phase

25. The Professional phase takes place continuously in every naval ship and establishment. In addition to giving the individual opportunity to apply his technical skill, it should build up attributes such as integrity, responsibility and a sense of service. These attributes do not lend themselves to formal instruction but are, in fact, natural growths fostered by good example and experience and,

as such, must be directly related to normal work and life. Nowadays, when the technical knowledge required by all is so extensive, it is of the first importance to establish that the attributes quoted above are just as important in building up professional ability as is technical skill.

Unit Phase

26. The Unit phase is divided into:—

Combatant Training, which deals with the sea-going and fighting efficiency of a ship or aircraft as a separate unit or in small tactical formations. This type of training also includes Armament, Anti-Submarine, Mine Clearance and Submarine Exercises, and such matters as full-power steaming, replenishment at sea, ship handling, communication exercises, and repair of action damage.

Fleet Training, which deals with the art of disposing and operating ships and aircraft, often in co-operation with the other services, so as to bring about the defeat of the enemy. This training in strategy, tactics and amphibious operations is achieved by Fleet Exercises, Amphibious warfare exercises, strategical and tactical games and by study at the Staff and Tactical Schools and Colleges.

Reserves and Mobilisation

27. The manpower allocated to the Navy in peacetime is necessarily limited by money and other factors, but it should be adequate to enable the Navy to perform its immediate tasks. Various organised reserves exist which can be called on in periods of national emergency, and these can be augmented by men who have completed their periods of National Service and by officers and ratings retired or pensioned from the active list. These reserves must receive sufficient training in peacetime to enable them to give efficient service when required. Where possible, officers and ratings are earmarked for the appointments they will hold in war, so that in peacetime their training can be directed towards the particular job they will have to perform.

28. The extent to which the Navy can expand in war will depend on the nature and course of the war, which cannot be foreseen. In the event of a global war in the nuclear age, it is unrealistic to visualise a large scale mobilisation of reserves on the old pattern, concentrated in a few important centres, or an immediate vast expansion of the training machine to build up additional manpower. There must obviously be some expansion, but this must be achieved swiftly, with ready-trained reserves and in accordance with carefully laid plans. Thereafter, further expansion will depend on the course of the war; if the war is prolonged and the resources for material expansion exist, additional manpower will have to be trained.

DISCIPLINE

Definition

29. The words " discipline " and " disciple " are both derived from the Latin *discere*—to learn. A disciple is a learner, and thus discipline is basically instruction or teaching. Discipline, as applied to the Armed Services, can perhaps best be described as " the teaching, or the state of affairs produced by the teaching, which makes a man do something which he would not unless he had learnt that it was the right, the proper, or the expedient thing to do ".

Forms of Discipline

30. The essential characteristic of discipline is obedience to orders and to a code of living. In its highest form, this obedience is willing, and virtually self-imposed, from a sense of duty which makes a man do not only what he has been told to do but what he feels he ought to do. Such discipline is the outward and visible form of good morale, leadership and training. In the lowest form of discipline, the obedience is reluctant; such discipline is based upon fear of punishment and compels obedience only to orders actually received.

To say that a disciplinarian is one who can keep a group of people in order is to speak the truth—but only half the truth. The best disciplinarian is one who can influence a group of people to keep themselves in order.

31. For success in a fighting force, the discipline must be such that obedience is based mainly on willingness. Obedience compelled by the fear of retribution, moral or physical, will last only so long as the force of compulsion can be applied. However, obedience based on the fear of retribution must play its part in certain cases, such as:—

(*a*) Compelling new entries to take part in a mode of life that will eventually lead to the development of a sense of duty and true discipline.

(*b*) Covering any gaps that may arise even in the best form of discipline, owing to temporary lapses from the sense of duty caused by human frailty under stress.

(*c*) Regimenting the small percentage which, through lack of moral sense, is impervious to the suggestion of duty.

Punishment

32. To be efficient and effective in war, any group of men must be well disciplined, but the discipline in the group is far better if it evolves from discipline in the individual. Discipline is not really improved by punishing something wrong, but by influencing individuals to do what is right. Not long ago a naval officer wrote:—*

> " The dignity of a great Service like ours requires that every officer and man shall be given credit in the first place for doing his best, and when he sins, of sinning in ignorance or forgetfulness. Then, if he still fails, those in authority can afford to act calmly, seeing they are backed by the authority of the whole Service and the Naval Discipline Act, with the Lords, Spiritual and Temporal and all the Commons in support."

This is not to say that punishment in itself is wrong, but that it must be administered with discrimination. However, no liberties should be allowed, for it is a disastrous fallacy to assume that if small lapses are overlooked the gesture will be repaid by an avoidance of more serious offences.

The Reason for Discipline

33. Whether obedience springs from willingness or the fear of retribution, the habit of instant obedience is essential since, in a crisis, time does not permit consideration of underlying causes. This habit of trained obedience to a leader, whether actually present or not, enables men to carry on through a period of human weakness when mind and body may be numb from strain, shock or fear. Hence the prime qualification of a leader on any plane is to be able to act normally in a crisis.

* The late Captain Rory O'Connor, Royal Navy, in *Running a Big Ship on Ten Commandments*.

34. Over and above the habit of instant obedience, a sense of duty (the urge to do what he feels he ought to do) enables a man to display initiative on any plane of activity provided the leader has made his intentions clear. Discipline thus provides the machinery for centralised direction, and allows decisions to be concentrated in a few hands; but true discipline, however strict, should be no bar to initiative when the occasion arises.

Conclusion

35. The basic factors affecting discipline are those which also affect morale, and they may be summarised as:—

Self-control,
Self and mutual respect and confidence, and
Good leadership.

APPENDIX A

Allocation and Direction of Shore-based Air Forces acting in conjunction with Naval Forces in War at Sea

The Air Ministry and the Admiralty have had under review, in the light of experience gained during the recent war, the principles which should govern the allocation and direction of shore-based air forces acting in conjunction with Naval forces in war at sea. Their conclusions have been embodied in the following agreement dated 2nd July, 1946.

The Problem

1. The conduct of war at sea embraces two widely different but complementary functions. The first is military and requires passage at sea to be secured for our own and Allied shipping and to be denied to enemy vessels. The second is a function of management and is concerned with the general use of sea communications, contraband control, control of the mercantile marine, etc. This latter function is mainly administrative and, so far as the Services are concerned, is a Naval responsibility.

2. The military problem involves operations carried out by the Royal Navy, by the Royal Air Force, or, more generally, by both services working in co-operation. In the latter case the problem is a joint one, but as such operations are the primary concern of the Royal Navy, whereas only a proportion of the Royal Air Force is specifically equipped, trained and normally employed on such operations, the naval command, in all normal circumstances, is the predominant partner.

3. Other units of the Royal Air Force up to the total strength available may, however, be required to undertake tasks connected with the war at sea, such as the fighter escort of convoys, sea mining, and tactical or strategical bombing.

Allocation of Air Forces to Maritime Role

4. The proportion of the total existing and potential air strength of the Royal Air Force, which shall be specifically equipped, allocated and trained to meet world-wide maritime commitments, will be laid down from time to time by the Chiefs of Staff or higher authority acting on the advice of the Admiralty and Air Ministry.

5. The division of these maritime Air Forces between Coastal Command at home and the various theatres overseas will be agreed between the Admiralty and Air Ministry, for submission to the Chiefs of Staff if necessary.

6. In war, the changing situation may demand increasing or decreasing the air forces thus allocated. Subject to the over-riding authority of the Chiefs of Staff such changes may be made by agreement between the Admiralty and Air Ministry or between the appropriate Commanders-in-Chief abroad.

7. It is the responsibility at all times of the Air Officer Commanding-in-Chief, Coastal Command, and of the Air Officer Commanding abroad, to keep the Air Ministry and the Air Officer Commanding-in-Chief respectively informed of the air requirements, both general and particular, of the Royal Navy in their theatres.

Disposition of Maritime Air Forces within Theatres

8. In so far as the air situation allows, the Air Officer Commanding-in-Chief, Coastal Command, and the Air Officer Commanding-in-Chief abroad, will use the maritime situation as specified by the Admiralty and Naval Commander-in-Chief respectively as a basis for disposing their Maritime Air Forces.

General Policy Governing Joint Naval/Air Operations

9. Whilst maritime strategy is primarily the responsibility of the Admiralty, planning for joint Naval/Air operations in war and the formulation of joint policy in peace-time is, under the overriding authority of the Chiefs of Staff, the joint responsibility of the Admiralty and the Air Ministry, or of the Commanders-in-Chief abroad.

Control and Command in Joint Naval/Air Operations

10. The successful conduct of joint operations can only be assured by the proper co-operation of the staffs concerned. The planning and conduct of joint Naval/Air operations will, therefore, be effected through the medium of Area Combined Headquarters for the Naval Commanders-in-Chief and the Air Officer Commanding the group concerned. Such headquarters will be in all respects joint headquarters with fully integrated intelligence staffs, both Naval and Air Commanders having full access to information bearing on all operations in their area.

11. As stated in paragraph 2, in maritime operations the predominant partner will usually (but not invariably) be the Naval Commander concerned. Unless otherwise stated by the Admiralty and Air Ministry at home or the Commanders-in-Chief overseas, the Naval Commander will, therefore, be the co-ordinating authority in the Combined Headquarters.

12. The co-ordinating authority is responsible, in the event of any difference of opinion, for deciding on the priority of tasks within the overall plan or policy laid down by the Admiralty/Air Ministry or the Commanders-in-Chief abroad. The execution of the tasks, and the issue of the necessary orders to units, is the responsibility of the Commander of the Service concerned.

13. The Royal Air Force elements of Area Combined Headquarters and the Air Forces they control will be under the command of Coastal Command Headquarters at home and of the Air Officer Commanding-in-Chief abroad. The Air Officer Commanding-in-Chief, Coastal Command, at home, and the Air Officer Commanding Group, abroad, will act as the agent of the Air Ministry and the Air Officer Commanding-in-Chief respectively, in the conduct of operations.

14. When Air Forces, other than those normally allocated to maritime work, are employed in connection with the war at sea, specific instructions regarding their operations will be issued at home by the Air Ministry in consultation with the Admiralty, and abroad by the Air Officer Commanding-in-Chief in consultation with the Naval Commander-in-Chief.

Operational Control

15. Notwithstanding the general rule set out in paragraph 12, there will be occasions on which units of one service must issue orders to units of the other (e.g., V.L.R. aircraft while actually engaged in escorting a convoy or in providing early airborne warning for a naval unit; shore-based naval squadrons working with the Royal Air Force; a fighter direction ship controlling air operations during an assault supported by Royal Air Force aircraft, etc.).

16. These occasions are to be regarded as special cases, but the issuing of orders from one service to another may always be authorized by the two Commanders concerned or higher authority.

Training

17. Each Service will be responsible for the conduct of the training of its own forces. The policy governing the training of all naval and air forces which may at any time be required to co-operate, shall, however, be agreed by the Board of Admiralty and the Air Council acting on the recommendation of the Sea/Air Warfare Committee. Wherever practicable, such training shall be carried out in joint establishments.

APPENDIX B

North Atlantic Treaty

Washington D.C., 4th April, 1949

The Parties to this Treaty reaffirm their faith in the purposes and principles of the Charter of the United Nations and their desire to live in peace with all peoples and all Governments.

They are determined to safeguard the freedom, common heritage and civilization of their peoples, founded on the principles of democracy, individual liberty and the rule of law.

They seek to promote stability and well-being in the North Atlantic area.

They are resolved to unite their efforts for collective defence and for the preservation of peace and security.

They therefore agree to this North Atlantic Treaty.

Article 1

The Parties undertake, as set forth in the Charter of the United Nations, to settle any international dispute in which they may be involved by peaceful means in such a manner that international peace and security and justice are not endangered, and to refrain in their international relations from the threat or use of force in any manner inconsistent with the purposes of the United Nations.

Article 2

The Parties will contribute toward the further development of peaceful and friendly international relations by strengthening their free institutions, by bringing about a better understanding of the principles upon which these institutions are founded and by promoting conditions of stability and well-being. They will seek to eliminate conflict in their international economic policies and will encourage economic collaboration between any or all of them.

Article 3

In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack.

Article 4

The Parties will consult together whenever, in the opinion of any of them, the territorial integrity, political independence or security of any of the Parties is threatened.

Article 5

The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all; and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognized by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action

as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.

Any such armed attack and all measures taken as a result thereof shall immediately be reported to the Security Council. Such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security.

Article 6

For the purpose of Article 5 an armed attack on one or more of the Parties is deemed to include an armed attack on the territory of any of the Parties in Europe or North America, on the Algerian Departments of France, on the occupation forces of any Party in Europe, on the islands under the jurisdiction of any Party in the North Atlantic area north of the Tropic of Cancer or on the vessels or aircraft in this area of any of the Parties.

Article 7

The Treaty does not affect, and shall not be interpreted as affecting, in any way the rights and obligations under the Charter of the Parties which are members of the United Nations, or the primary responsibility of the Security Council for the maintenance of international peace and security.

Article 8

Each Party declares that none of the international engagements now in force between it and any other of the Parties or any third State is in conflict with the provisions of this Treaty, and undertakes not to enter into any international engagement in conflict with this Treaty.

Article 9

The Parties hereby establish a council, on which each of them shall be represented, to consider matters concerning the implementation of this Treaty. The Council shall be so organised as to be able to meet promptly at any time. The Council shall set up such subsidiary bodies as may be necessary; in particular it shall establish immediately a defence committee which shall recommend measures for the implementation of Articles 3 and 5.

Article 10

The Parties may, by unanimous agreement, invite any other European State in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area to accede to this Treaty. Any State so invited may become a party to the Treaty by depositing its instrument of accession with the Government of the United States of America. The Government of the United States of America will inform each of the Parties of the deposit of each such instrument of accession.

Article 11

This Treaty shall be ratified and its provisions carried out by the Parties in accordance with their respective constitutional processes. The instruments of ratification shall be deposited as soon as possible with the Government of the United States of America, which will notify all the other signatories of each deposit. The Treaty shall enter into force between the States which have ratified it as soon as the ratifications of the majority of the signatories, including

the ratifications of Belgium, Canada, France, Luxembourg the Netherlands, the United Kingdom and the United States, have been deposited and shall come into effect with respect to other States on the date of the deposit of their ratifications.

Article 12

After the Treaty has been in force for ten years, or at any time thereafter, the Parties shall, if any of them so requests, consult together for the purpose of reviewing the Treaty, having regard for the factors then affecting peace and security in the North Atlantic area, including the development of universal as well as regional arrangements under the Charter of the United Nations for the maintenance of international peace and security.

Article 13

After the Treaty has been in force for twenty years, any Party may cease to be a party one year after its notice of denunciation has been given to the Government of the United States of America, which will inform the Governments of the other Parties of the deposit of each notice of denunciation.

Article 14

The Treaty, of which the English and French texts are equally authentic, shall be deposited in the archives of the Government of the United States of America. Duly certified copies will be transmitted by that Government to the Governments of the other signatories.

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